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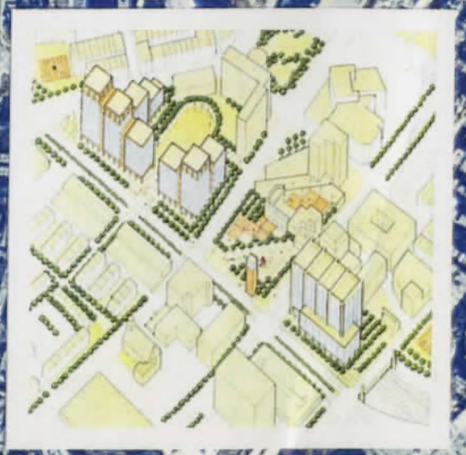

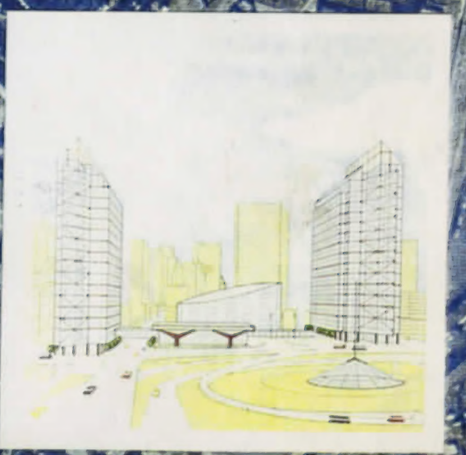

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A Report Prepared for the
Massachusetts Turnpike Authority

by

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Bird's Eye view of Massachusetts Turnpike.

(Photo courtesy of Aerial Photos International, Inc.)

1. INTRODUCTION

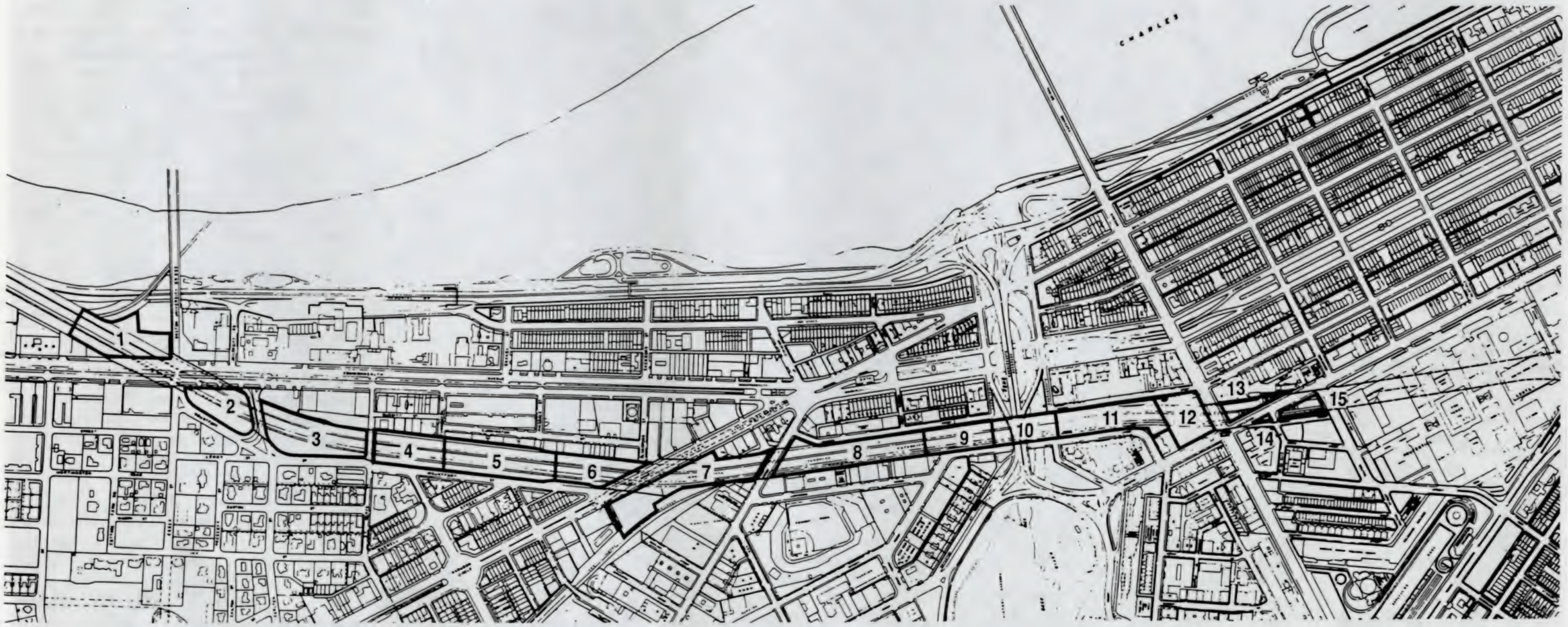
STUDY OBJECTIVES

This document, Air Rights Study: Development Options, examines the potential for air rights development along the Massachusetts Turnpike in Boston and Brookline. It is not a plan, but rather a feasibility study with a set of detailed analyses to help inform public discussion of such questions as: What kind of development should be encouraged, how much development could be accommodated, and where along the corridor should development be located? The findings presented are intended as resources to support planning processes within the overall context of urban planning in Boston and Brookline, as well as regional transportation planning efforts. It is in conjunction with such collaborative planning efforts that MassPike will be able to answer these questions and to move specific options forward.

Built in the 1960's to connect the turnpike from its then-terminus at Route 128 to the center of the city, the Boston Extension of the Massachusetts Turnpike is a strategic corridor through Boston and Brookline. It crosses a variety of urban districts with a full range of institutional, commercial, and residential uses; in a single half-mile stretch in Back Bay stands a major concentration of existing air rights structures, including the Hynes Auditorium, the Prudential Center, Copley Place, and the John Hancock Tower garage. In the future, near its current intersection with the Central Artery/I-93, the turnpike will meet the entrance to the new Third Harbor Tunnel, now under construction; when completed, the tunnel will provide direct access to Logan International Airport and bring an added dimension to the turnpike's place in the urban system, including the opportunity for air rights development above the new interchange.

BU Bridge / Kenmore

Massachusetts Avenue



DEVELOPMENT OPTIONS

PARCELIZATION

Bay Village / Chinatown

South Bay

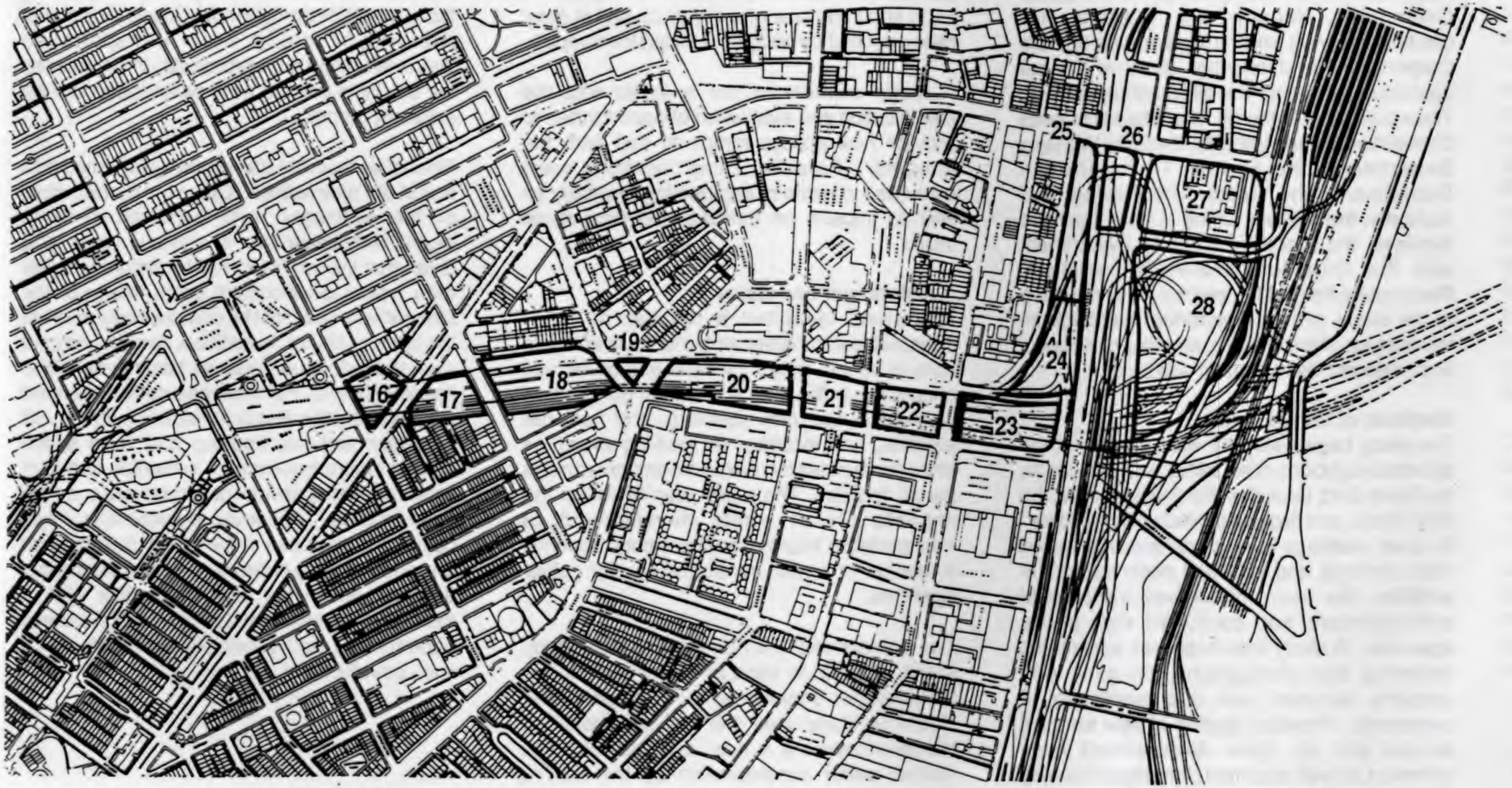


Fig. 1.1

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Boston has a long history of creating new development zones for the city by reclaiming land along its shores: Back Bay was such a nineteenth-century landfill project, as were Storrow Drive and the Esplanade, the South Boston seaport and East Boston's Logan Airport. New air rights development along the length of the existing turnpike would be a reclamation project in this urban design tradition. Moreover, development above the turnpike could help restore the urban fabric where neighborhoods have been historically divided and could improve the pedestrian environment in what is now a broad and inhospitable corridor. It could also channel institutional growth and new economic development without displacing existing residents or uses.

This study looks at air rights opportunities along the 2.75-mile section of the turnpike between the Boston University Bridge at the edge of Brookline and downtown Boston, an area encompassing approximately 80 acres.

STUDY APPROACH

The study incorporates two major areas of investigation. An engineering analysis was undertaken to: a) determine the feasibility of constructing air rights platforms without jeopardizing public safety or interrupting turnpike operations; b) identify the locations in which platforms might be constructed and evaluate the relative degree of difficulty associated with such construction; and c) identify opportunities for improving vehicular access to and from the turnpike.

The urban design analysis was undertaken to: a) identify opportunities for improving vehicular circulation, pedestrian movement and mass transit in the areas adjacent to the corridor; and b) prepare land use options for the utilization of air rights parcels, based on engineering alternatives. The development alternatives selected and tested are meant to demonstrate the possible range of public actions and are not conceived as specific architectural or urban design proposals. They should, however, help to identify design issues for future study and provide a basis for economic analysis.

Public Participation

The consultant team and MassPike relied on public participation from the beginning of the study, with the collaboration of neighborhood organizations and residents; public and private medical, educational, and cultural institutions, such as Boston University, the Quincy Community School, the Institute for Contemporary Art, and the Medical Area Service Corporation; and relevant state and local agencies, including the Massachusetts Bay Transportation Authority, the Massachusetts Convention Center Authority, the State Highway Department, the Boston Transportation Department, the Boston Redevelopment Authority, the Mayor's Office of Neighborhood Services, the Brookline Planning Department and the Brookline Traffic Department. Participants helped to determine the direction of the study, provided important feedback as the analysis of the turnpike corridor progressed, and reviewed development scenarios.

Methods of Investigation

The study began with site visits in each of the affected neighborhoods: Chinatown/Bay Village, the South End, Back Bay, Kenmore Square, the West Fens, and Brookline. Visits were followed by open meetings in which participants voiced their concerns and identified major issues. In addition, the team interviewed institutional administrators and consulted with public agencies. A study data-base was assembled including site photography, mapping and property surveys, and documentation of ownership. Previous studies of new turnpike access and air rights development were reviewed, as well as current planning and zoning documents for both Boston and Brookline.

Analysis

The turnpike corridor and its urban context were studied at a range of scales. The turnpike facility itself was examined: road access and operations, special engineering conditions affecting air rights constructability, and development opportunities. The context around the corridor - political jurisdictions, activity zones, open space and transportation networks - was mapped and analyzed. The corridor as a whole was explored as a series of urban elements formed from portions of the abutting neighborhoods, and then divided into 28 parcels (see Figure 1.1 each about the size of a city block and in most cases defined by bridges crossing the turnpike.

A major element of the analysis was the identification and evaluation of opportunities to provide new access ramps to and from the turnpike. Potential ramp locations were evaluated in terms of engineering feasibility as well as impacts on turnpike and local street traffic.

Development Scenarios

The study identified a number of major transportation improvements that could enhance access to air rights parcels and/or reduce congestion in the area adjacent to the corridor. These included new ramps to and from the turnpike, new locations for parking structures and opportunities for new and/or improved mass transit facilities. The study also reviewed the impacts on air rights development of transportation improvement projects currently in design or under consideration by other agencies.

The corridor was then divided into four study areas. Central to each is one or more major transportation improvements. In the Brookline/ Kenmore study area the key transportation improvements are a new circumferential rail station under consideration by the MBTA, alternative options for the location of new turnpike ramps and a new inter-modal center at Kenmore Square. In the Massachusetts Avenue/Boylston Street study area the retention or removal of turnpike ramps is central to the land use options. The Chinatown/Back Bay /South End study area proposals include an alternative location for the Central Artery/Third Harbor Tunnel (CA/T) exit ramp proposed for Marginal Road, a major upgrade of Herald Street as well as new turnpike ramps. In the South Bay study area, the study examines the impacts of CA/T and South Station Transportation Center ramps on development.

Alternative land use development concepts were then developed for each study area, incorporating those air rights parcels most closely associated with major study area transportation improvement proposals/projects. In some cases the air rights parcels were extended to include adjacent parcels.

Financial feasibility studies were performed on a few of the alternatives. Given the current state of the economy, with commercial rents significantly lower than in previous years and given that the cost of air rights platforms higher than typical development costs, many of the alternatives would not be commercially viable in the current market. In addition, demand may not exist today for such uses as commercial office space or hotels. For other alternatives demand may exist but the cost of constructing ramps, rail or transit stations, housing and open space would require government subsidies and joint ventures among several public, private and non-profit entities. This level of analysis is yet to come. The purpose of the report is to present an understanding of the complexities of air rights development in the turnpike corridor and to identify engineering and urban design issues, opportunities and constraints associated with such development.

2. ISSUES

The turnpike in Boston was originally built along the Boston and Albany mainline of the New York Central Railroad, widening the existing below-grade trough of the railroad tracks and reinforcing the chasm between adjacent neighborhoods. Since then, it has remained largely separated from the city around it, except where its ramps connect with city streets. Air rights development above the roadway represents a chance to restore portions of the urban grid along the turnpike's path and to rationalize these travel patterns. It also provides a context for assessing opportunities/proposals for improving access to and from the MassPike in the area between the Boston University Bridge and the South Bay interchange. In addition, an opportunity exists to anchor the southern tip of downtown Boston with a combination of air rights and at-grade development in the vicinity of the South Bay interchange. Whatever improvements are considered, they must meet the turnpike's operational needs, conform to engineering standards, and respond to site constraints.

Clearly, a wide array of issues are embedded in considering development of the turnpike corridor, some outstanding and others which emerge as possible development options are considered. These topics have been grouped into five categories for further analysis: neighborhood issues, access issues, special issues related to the Central Artery/Third Harbor Tunnel (CA/T) interchange, turnpike design and operations, and physical constraints.

NEIGHBORHOOD ISSUES

Two types of issues were identified in the neighborhood meetings: problems directly resulting from the turnpike's presence and problems not directly resulting from the turnpike but for which development above the turnpike may offer a possible solution. Participants pointed out that the turnpike acts as a barrier, restricts pedestrian access between neighborhoods, and hampers land consolidation for new development. However, residents concerned about institutional expansion into neighborhoods, commented that turnpike air rights could provide alternative locations for some of this growth.

Turnpike air rights development could also provide new sites for housing, open space, parking in strategic locations, and new pedestrian routes, as well as new mass transit stations and routes.

The key issues identified for each neighborhood are listed below.

BU Bridge/St. Mary's Street

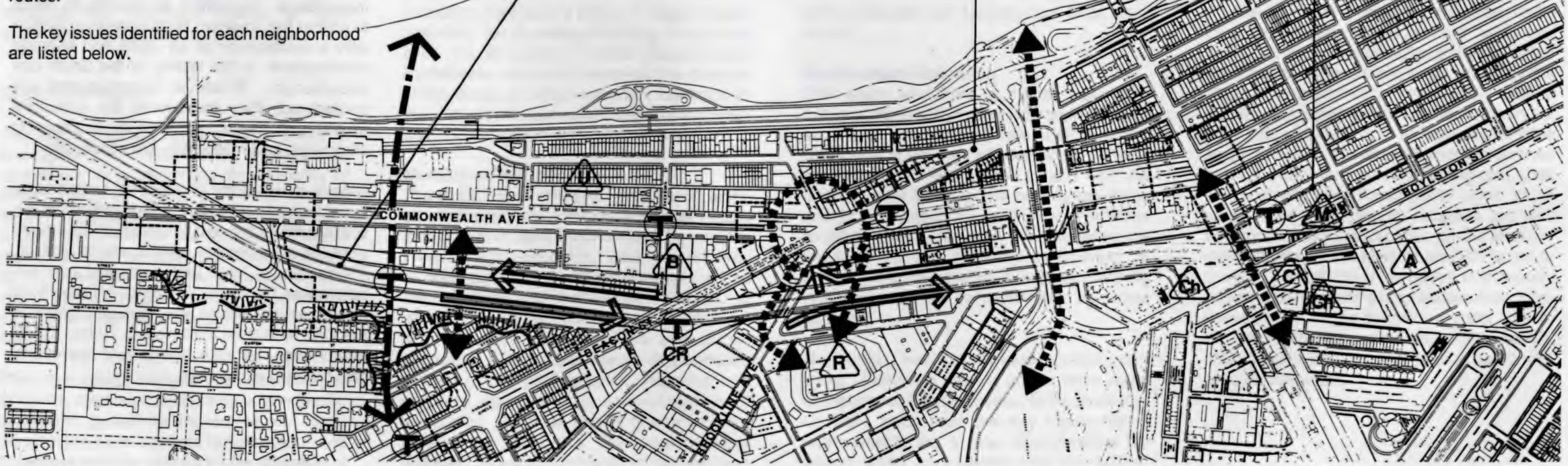
- New development will be hampered by gaps in turnpike deck.
- Pedestrian links between BU campus and student housing are inconvenient.
- Buffer between the turnpike and sensitive residential edges is inadequate.
- Traffic is congested.

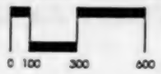
Kenmore/Fenway/Charlesgate

- Turnpike separates Kenmore Square from Fenway Park and the Fenway.
- Pedestrian circulation is difficult and hazardous.
- Transportation modes are poorly connected.
- Turnpike blocks open-space access and splits parcel in vicinity of Bowker overpass.
- Parking provision is inadequate.
- Traffic is congested.

Massachusetts Avenue

- Continuity of Boylston Street is broken by gaps in turnpike deck.
- Convention Center parking is limited.
- Convention Center truck-loading facilities are inadequate.





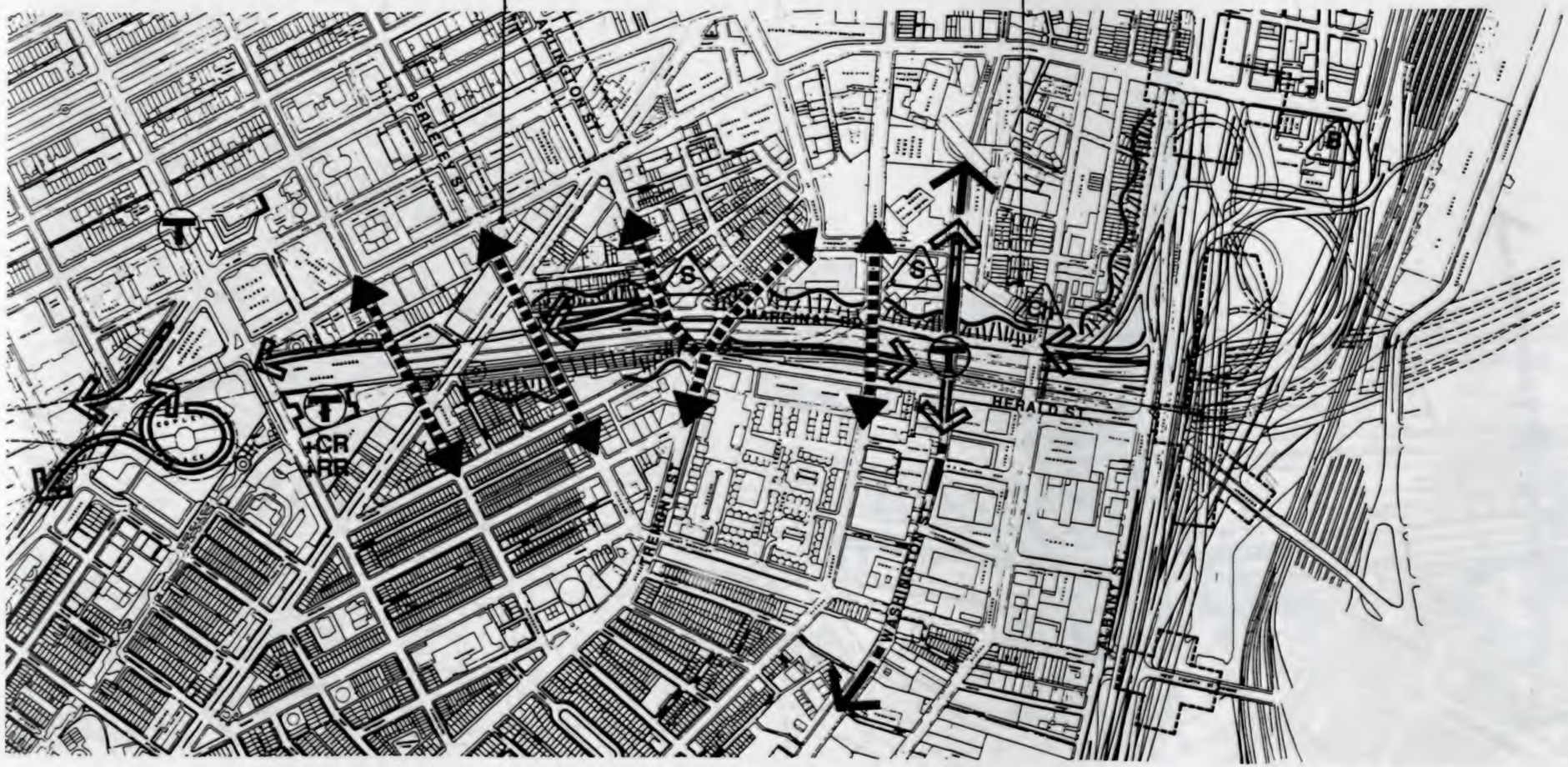
URBAN DESIGN ISSUES

Back Bay/Bay Village/South End

- Turnpike divides the Back Bay and Bay Villlage from the South End.
- Turnpike Bridges are perceived as unsafe for isolated pedestrians.
- Buffer between the turnpike and sensitive residential edges is inadequate.

Chinatown

- Turnpike divides Chinatown and the South End.
- Turnpike bridges are perceived as unsafe for isolated pedestrians.
- Proposed Marginal Road ramps will bring adverse traffic impacts.
- Current proposal to widen Washington Street bridge will result in adverse traffic impacts.
- The area suffers from acute housing shortage.
- Open space and parking are inadequate.



- Existing Access
- Potential Access
- Pedestrian Route
- Community Features
  - A=Auditorium
  - B=Building
  - C=College
  - Ch=Church
  - M=Museum
  - S=School
  - R=Recreation
- Frontage Relationship
- Traffic Congestion
- Proposed Transit
- Transit Stop
- +CR Commuter Rail Stop
- +RR Railroad Station

Fig. 2.1

NEIGHBORHOOD URBAN DESIGN RESPONSES

An array of possible design responses to the issues raised by local residents was developed and presented at the second round of neighborhood meetings. While these responses are tailored to the varied site conditions and opportunities found in each local area, an overall urban design objective was to replace the open turnpike cut with new street-level development and better pedestrian access throughout the corridor.

These design responses were used to generate and explore the development scenarios presented in Section 4.

BU Bridge/St. Mary's Street

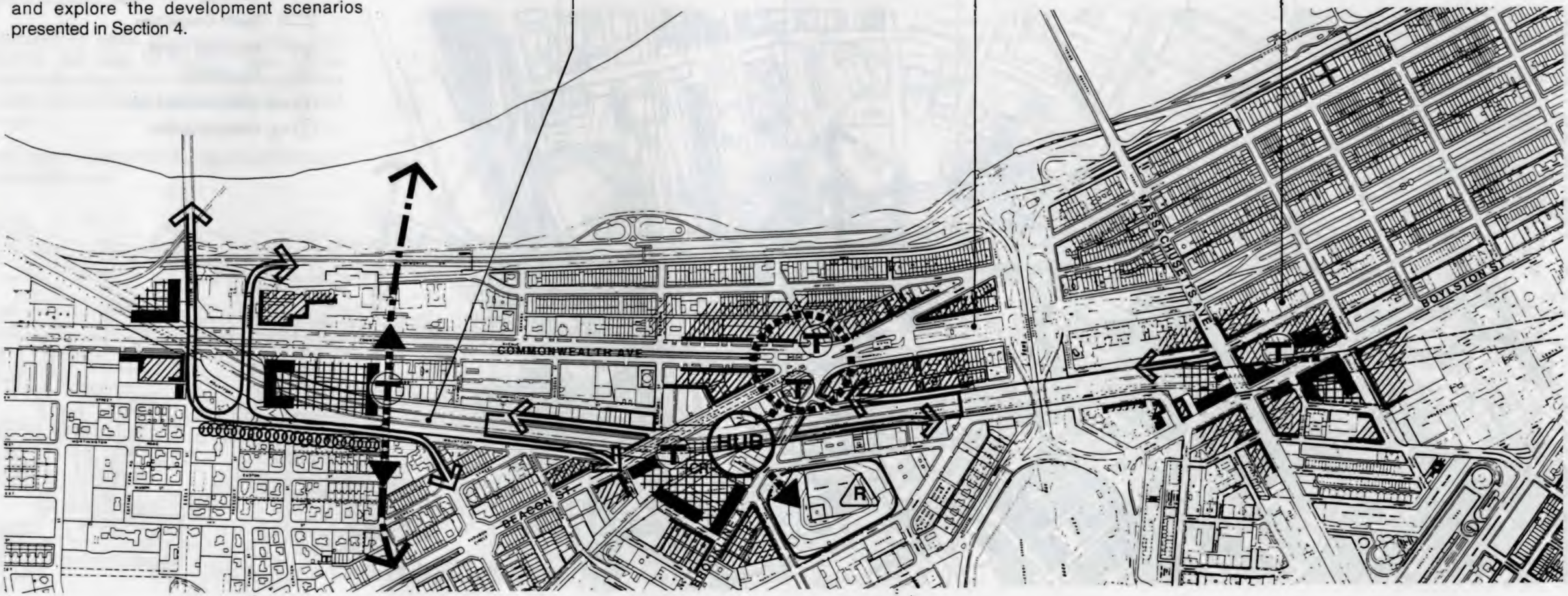
- Develop a "gateway" at the BU Bridge/ Brookline boundary.
- Simplify traffic circulation.
- Buffer adjacent low-density residential area.
- Consolidate development parcels on Commonwealth Avenue.
- Create opportunities for mixed-use development.
- Improve pedestrian environment.
- Study possible circumferential-transit station locations.

Kenmore/Fenway/Charlesgate

- Study inter-modal transportation center.
- Develop potential direct turnpike access.
- Develop significant parking facilities.
- Improve pedestrian circulation.

Massachusetts Avenue

- Develop continuous building edge along Massachusetts Avenue.
- Develop continuous building edge along Boylston Street.
- Expand parking facilities.
- Tie the Auditorium transit station into existing and new development.



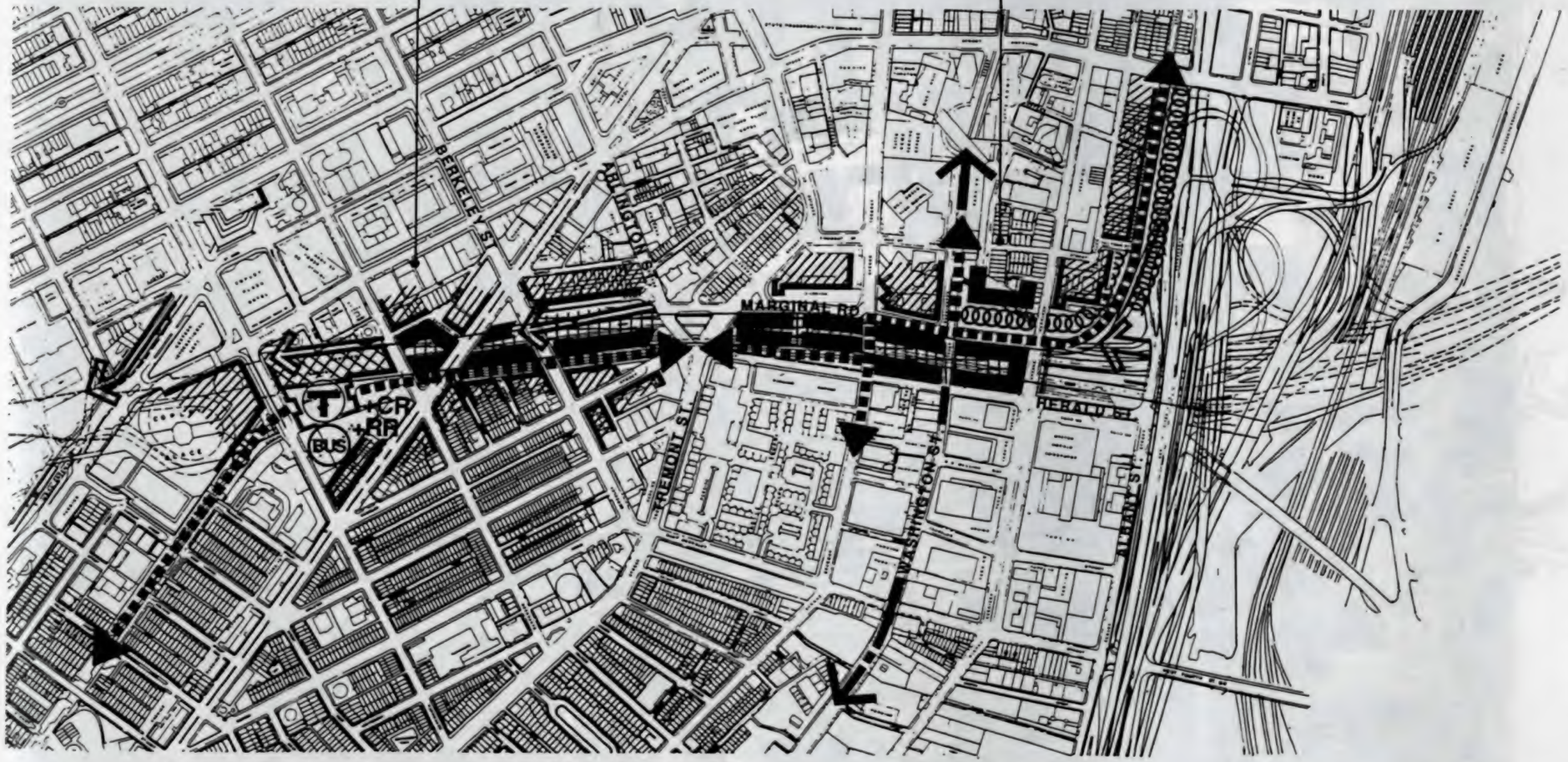
DESIGN EXPLORATIONS

Back Bay/Bay Village/South End

- Continue Southwest Corridor Park along turnpike.
- Locate new inter-city bus terminal near Back Bay Station.
- Improve residential edges along turnpike.
- Improve pedestrian environment.

Chinatown

- Create residential development opportunities.
- Create alternative institutional sites.
- Link air rights parcels with adjacent parcels.
- Buffer traffic, noise and visual impacts.
- Connect the Central Artery and Southwest Corridor open-space systems.



- Existing Building
- Air Rights Opportunity
- Vehicular Circulation
- Pedestrian Circulation
- Landscape Buffer
- Existing Circulation
- Transit Stop
- T+CR Commuter Rail Stop
- T+RR Railroad Station
- Proposed Transit Route
- Parking Structure

Fig. 2.2

TURNPIKE ACCESS ISSUES

The identification of opportunities to create new turnpike ramps was seen as an important goal of this study, since improved access might both enhance development and help solve local problems related to vehicular intrusion. A primary task in this process was to examine the existing turnpike access and egress systems (see Figure 2.3). A subsequent task was to evaluate both new and previous engineering concepts for additional turnpike access. As a first step, all ramp locations previously proposed or studied were reviewed and either discarded as not feasible (usually because they could not conform with federal highway design standards) or selected for further study. Concepts which were discarded include the Bowker Overpass ramps and an air rights parking structure at Massachusetts Avenue with direct turnpike access. However, new Arlington Street/Berkeley Street ramps - an Arlington Street eastbound on-ramp paired with a Berkeley Street off-ramp - were retained for further study. Potential new access points were also identified near Kenmore Square and as part of a major redesign for Herald Street between Chinatown and the South End. These concepts are discussed in the Opportunities section of the report .

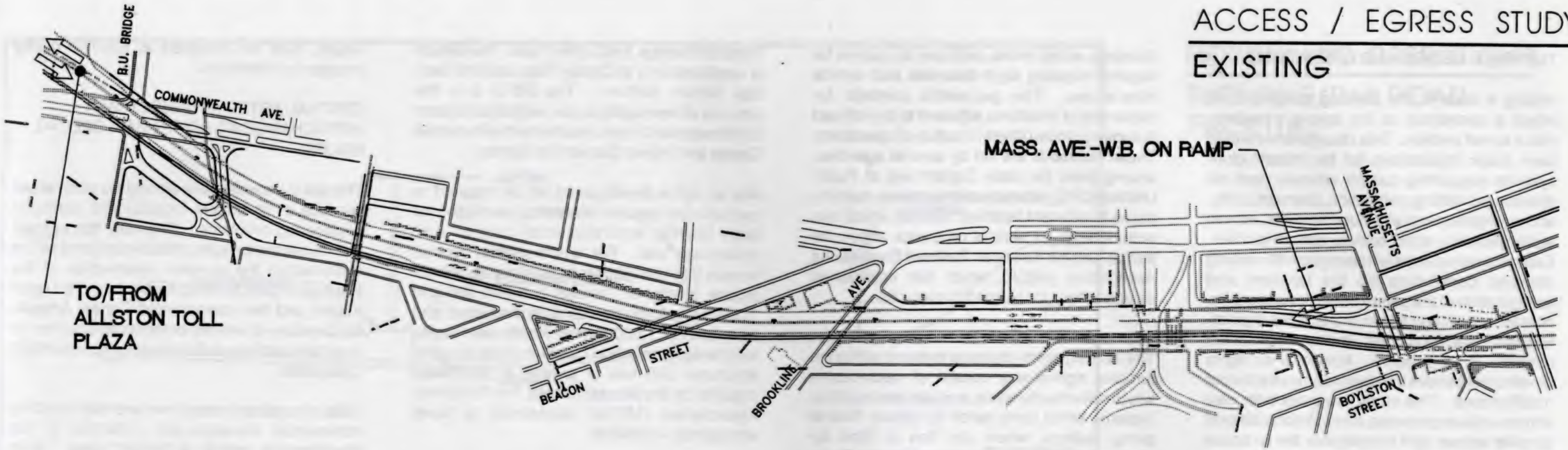
Various roadway access strategies can be designed to serve different users and to prevent new traffic congestion on local streets. Ramps can serve the general public, or they can provide limited access to a particular facility. Ramps can also be integrated with parking garages and transit connections, capturing traffic before it reaches local streets. In addition, turnpike tolls could be added to parking fees in these new garages, so that separate toll plazas would not be required. These strategies are examined in more detail in the Access Alternatives section of the report. It should also be noted, however, that in the consideration of access opportunities, the benefits of new ramps need to be weighed against the negative impacts on turnpike operations and the efficiency of a limited access highway.

Aerial view of the South Bay Interchange

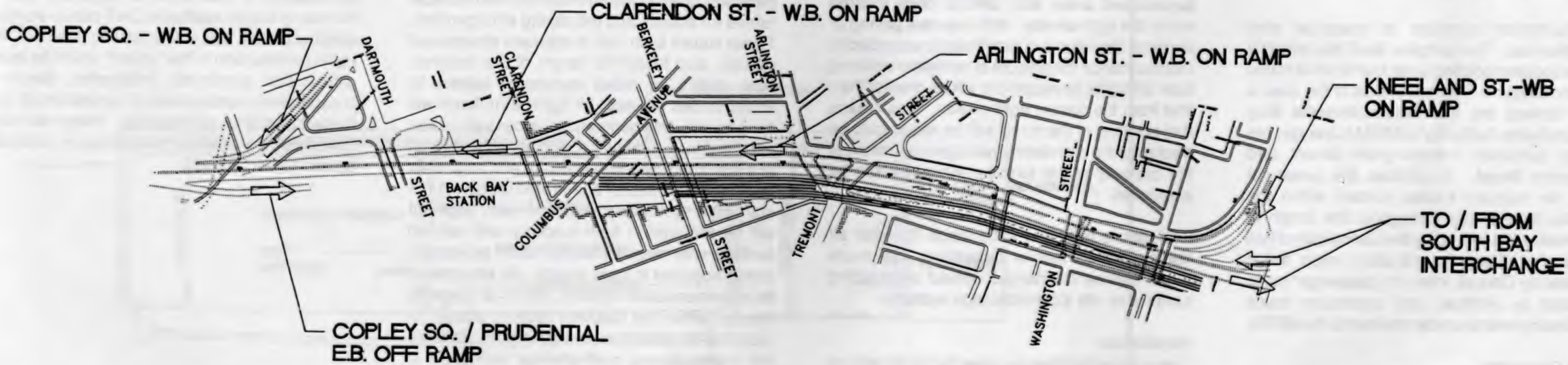
(Photo courtesy of Aerial Photos International, Inc.)

ACCESS / EGRESS STUDY

EXISTING



WESTERLY SECTION



EASTERLY SECTION

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Fig. 2.3

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TURNPIKE DESIGN AND OPERATIONS

Adding a deck to the existing turnpike is, in effect, a conversion of the open-cut roadway into a tunnel section. This change alone would have major implications for the infrastructure systems supporting current vehicular and rail operations: lighting, ventilation, drainage, utility, and emergency and structural systems, as well as the geometry of the roadway and rail facilities. Each of these systems will be impacted to varying degrees depending on the location and configuration of the parcel being developed, the operations existing within the turnpike right-of-way and adjacent parcels, and the length of the roadway to be covered. Additional air rights development above the deck may require further modifications. This study evaluates both new and previous engineering concepts for additional turnpike access and investigates the technical feasibility of new air rights development above the turnpike roadbed as well as the adjacent railroad (see Figure 2.4).

The turnpike corridor is irregular and asymmetrical. The turnpike itself has variable widths accommodating up to four lanes of traffic in each direction. The south side of the road is also flanked by the Massachusetts Bay Transportation Authority's (MBTA) Orange Line transit between Washington Street and Clarendon Street. In addition, the easement rights for railroad tracks located within the turnpike right-of-way throughout the length of the turnpike are owned by the Consolidated Rail Corporation (Conrail), and carry freight trains operated by Conrail, inter-city passenger trains operated by Amtrak, and commuter trains operated by Amtrak under contract to the MBTA.

Road Geometry
The geometry of existing facilities affects air rights development by limiting the locations where support elements can be placed. The elements which control structure placement include the number and width of travel lanes, the type and width of shoulders for breakdowns and surface drainage, safety walks, setbacks on curves for required stopping sight-distances and vertical clearances. The geometric controls for placement of structures adjacent to the railroad include minimum offsets for safety of operations. These standards are set by several agencies, among them the state Department of Public Utilities (DPU), whose purview extends from the tracks to adjacent facilities; Conrail, which has requirements for vertical clearance above the tracks; and the American Railroad Engineering Association (AREA), which has established design criteria for railroad construction.

Drainage
The existing storm-drainage systems within the turnpike right-of-way consist of catch-basins which collect surface flow, and pipe and manhole systems which carry runoff by gravity flow to pump stations, where the flow is lifted for discharge to the receiving waters (Charles River, Muddy River, or Fort Point Channel). These systems carry flows from the existing roadways, landscaped areas and railroad beds located within the right-of-way. With any new paving or decking, the volume of runoff can be expected to increase since the amount of rainwater draining from air rights development will be greater than that from the current right-of-way. This means that portions of the runoff will be required to be discharged to new storm-drainage systems since the capacity of the turnpike system would be exceeded.

Evaluations will need to be made for each air rights development to determine how much runoff can be discharged without overloading turnpike or city storm-drainage systems.

Ventilation
The existing facilities are open to the air with no requirement for mechanical ventilation other than at existing air rights development. The Back Bay section of the turnpike is currently ventilated by three independent systems constructed in conjunction with the Prudential Center and Hynes Convention Center, the Hancock Garage, and Copley Place. The railroad is ventilated only at Copley Place and the Back Bay Station platform. The MBTA is in the process of developing a new ventilation system for the segment of rail tunnel below the Prudential Center and Hynes Convention Center.

Any air rights development will be required to evaluate the need for mechanical ventilation for both normal environmental control and emergency use. For environmental control, tunnels less than 500 feet long generally will not require ventilation; tunnels between 500 and 1,000 feet long must be carefully evaluated; and tunnels over 1,000 feet in length will require mechanical ventilation. Tunnels under air rights structures 200 feet or greater in length are required by the Massachusetts Fire Protection Association (MFPA) guidelines to have emergency ventilation.

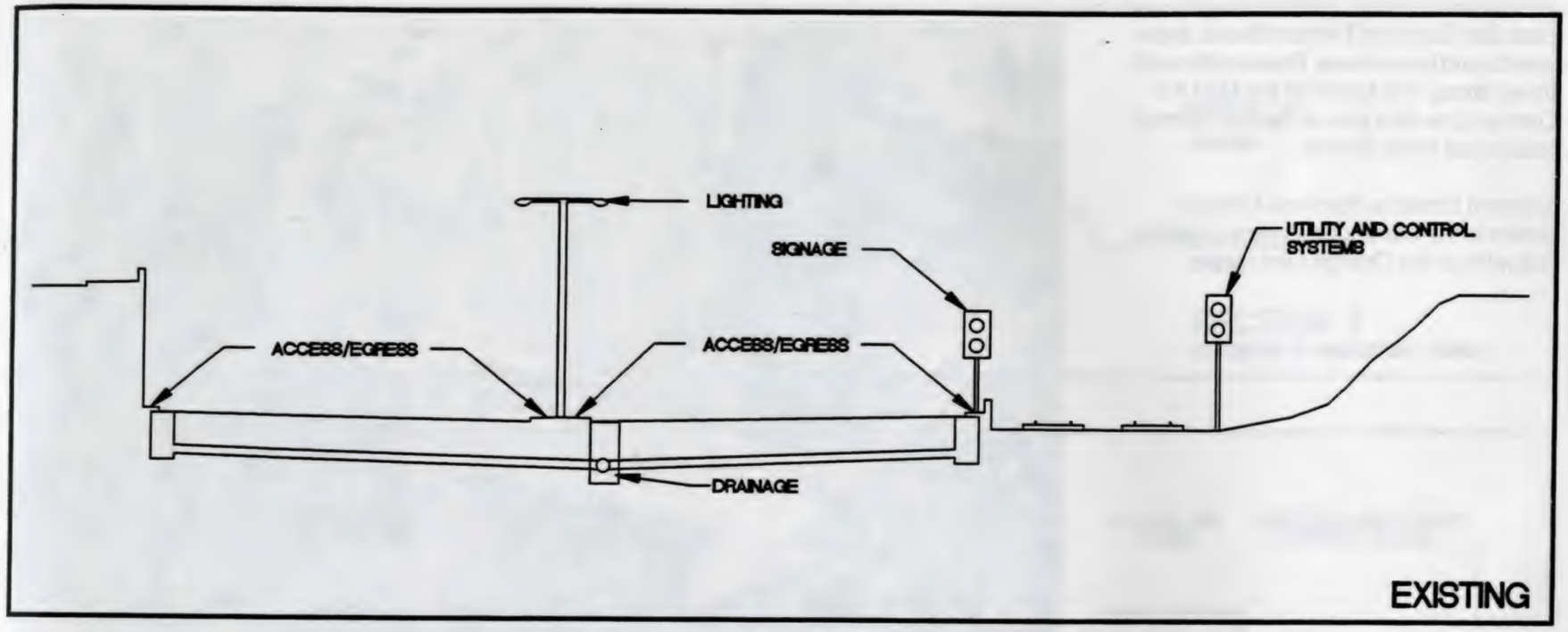
Fire/Life Safety
The existing roadway and railroad tracks are generally open to the environment with multiple routes for access and exit during emergencies. These routes both exit to adjacent streets and parcels, and follow the length of the facilities. New routes for either escape or access to emergencies beneath air rights structures will be required. As a general rule, access should be provided to or between segments of the tunnel at a maximum 500-foot spacing, and segments must be separated by a fire-rated barrier. A fire standpipe system accessible to each segment will be required in both roadway and railroad tunnels, with risers located at easily accessible points adjacent to local streets. An emergency telecommunication system, which is currently located within the roadway section, should be modified to reflect this new condition. Portable fire extinguishers may also be warranted in some sections.

All structures directly over or supporting facilities above the turnpike are required to have a three-hour fire rating. Systems such as communications, emergency power, and water supply, must be designed to function during emergency conditions.

CENTRAL ARTERY/TUNNEL (CA/T) INTERCHANGE AT SOUTH BAY: SPECIAL ISSUES

This site is a special case among the study areas because of its unique location and particular engineering problems. Originally the eastern terminus of the turnpike, this 25-acre area will be dedicated to the complex intersection of the existing turnpike, the third harbor tunnel to Logan Airport, and the reconstructed Central Artery/I-93 Corridor. It has the potential to become an important and high-visibility destination at a major crossroads.

Initial assessments may have overestimated the commercial development potential of the interchange's central or "infield" area. After further study and a series of joint meetings with the Massachusetts Highway Department and its consultants, it has become apparent that a number of factors related to CA/T plans - access, constructability, etc. - diminish this potential. Air rights construction in the "infield" would be more difficult than previously anticipated, due to a crisscrossing combination of curved tunnel and fly-over roadway alignments. There are also limited opportunities for pedestrian or vehicular access to the "infield".


LIGHTING
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UTILITY AND CONTROL SYSTEMS
ACCESS/EGRESS
ACCESS/EGRESS
DRAINAGE
EXISTING

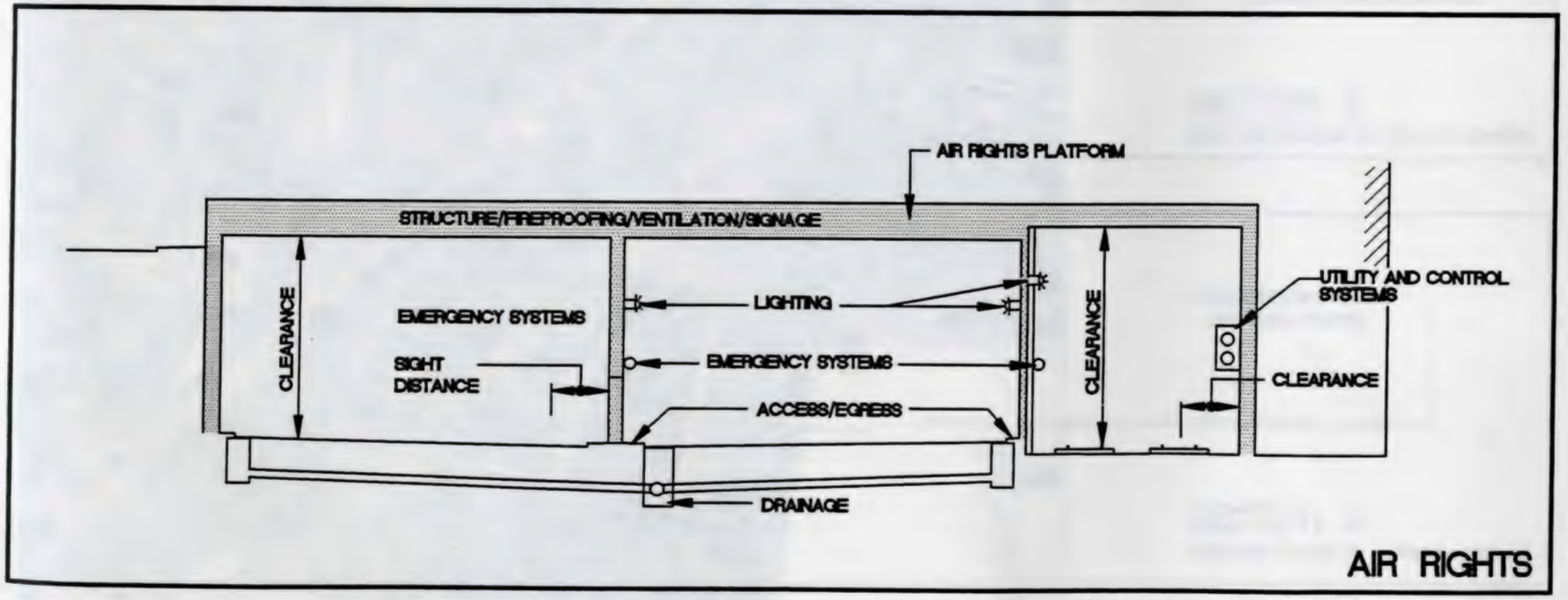

AIR RIGHTS PLATFORM
STRUCTURE/FIREPROOFING/VENTILATION/SIGNAGE
CLEARANCE
EMERGENCY SYSTEMS
SIGHT DISTANCE
LIGHTING
EMERGENCY SYSTEMS
ACCESS/EGRESS
DRAINAGE
CLEARANCE
UTILITY AND CONTROL SYSTEMS
CLEARANCE
AIR RIGHTS

Fig. 2.4

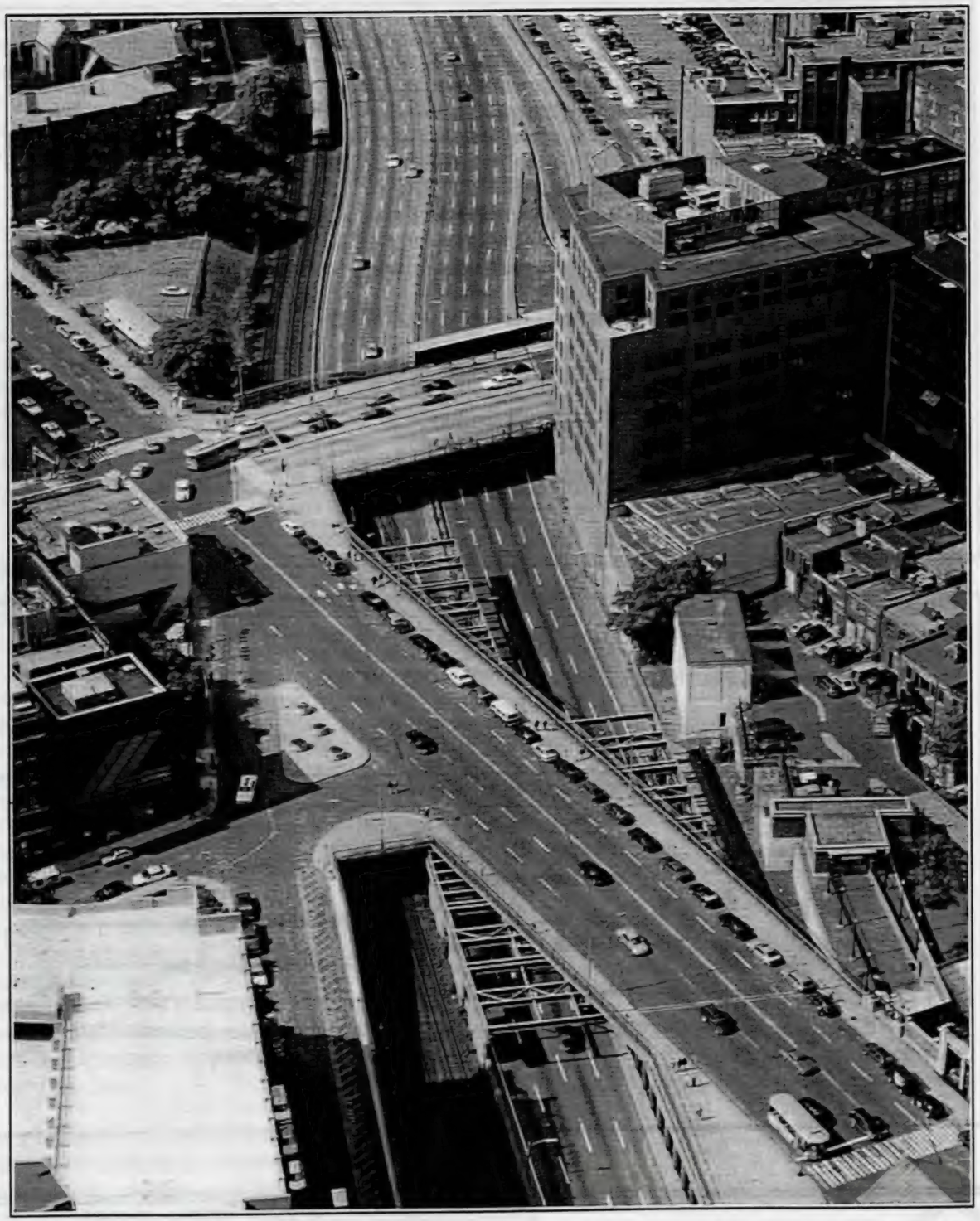
PHYSICAL CONSTRAINTS

Any new air rights construction in the turnpike corridor will be constrained by a number of factors. This section identifies general constraints applying to development over any part of the turnpike as well as specific constraints applying to individual parcels - particularly platform construction issues. In addition, it cites proposed or anticipated projects whose construction would impede air rights development or which air rights plans must be designed to accommodate. In any of these cases, any new development must allow continued operation of a number of regional transportation systems including the turnpike itself, rail and transit service, and a variety of utilities. From a technical point of view, however, construction of platforms to support air rights development is the greatest engineering challenge in the study, and the largest single constraint on any given parcel, in part because of substantial cost premiums.

General Constraints

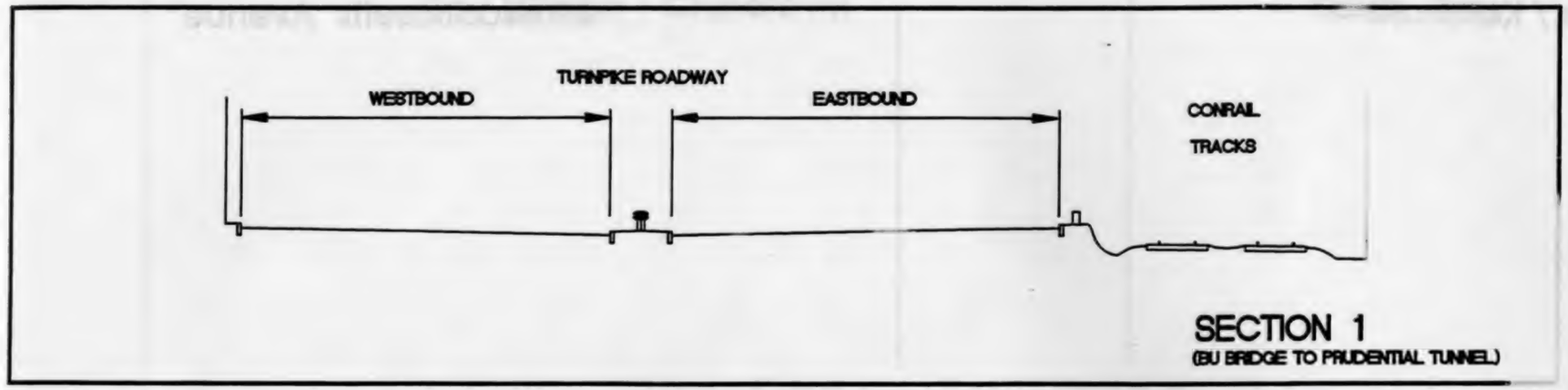
Air rights development over any portion of the turnpike and the associated railroad easements will be constrained by the need to maintain traffic flow on both the highway and the railroad at current levels, both during construction and after completion. It will be necessary to maintain adequate vertical clearance over both highway and railroad operations, and to provide adequate horizontal clearances between the travel corridor and new structures. These requirements control the length of structural spans bridging the turnpike roadway and railroad facilities as well as the clearances required beneath them. The three basic cross-sections listed below control the development of air rights structures (see Figure 2.5).

- BU Bridge to the Prudential Center/Hynes Convention Center: four westbound and four eastbound turnpike travel lanes and two railroad tracks.
- Back Bay Station to Tremont Street: three westbound travel lanes, three eastbound travel lanes, two tracks of the MBTA's Orange Line, two sets of Conrail railroad tracks and three Amtrak.
- Tremont Street to Harrison Avenue: similar to the Clarendon/Tremont section but without the Orange Line tracks.



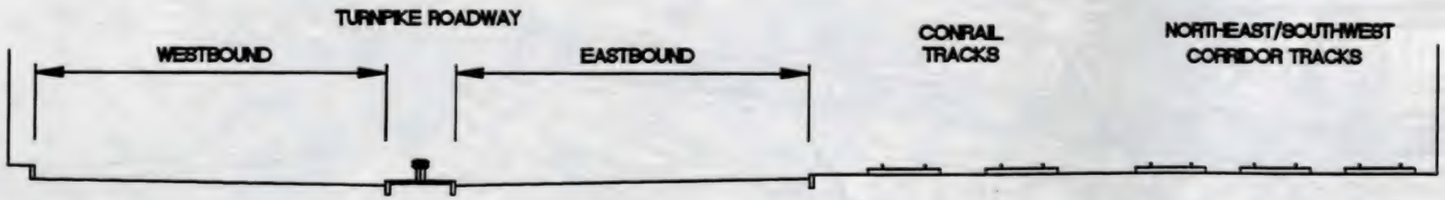
View of the turnpike at Boylston Street and Massachusetts Avenue crossings looking west.

PHYSICAL CONSTRAINTS
EXISTING OPERATIONS



SECTION 1
(BU BRIDGE TO PRUDENTIAL TUNNEL)

SECTION 2
(BACK BAY STATION TO TREMONT STREET)

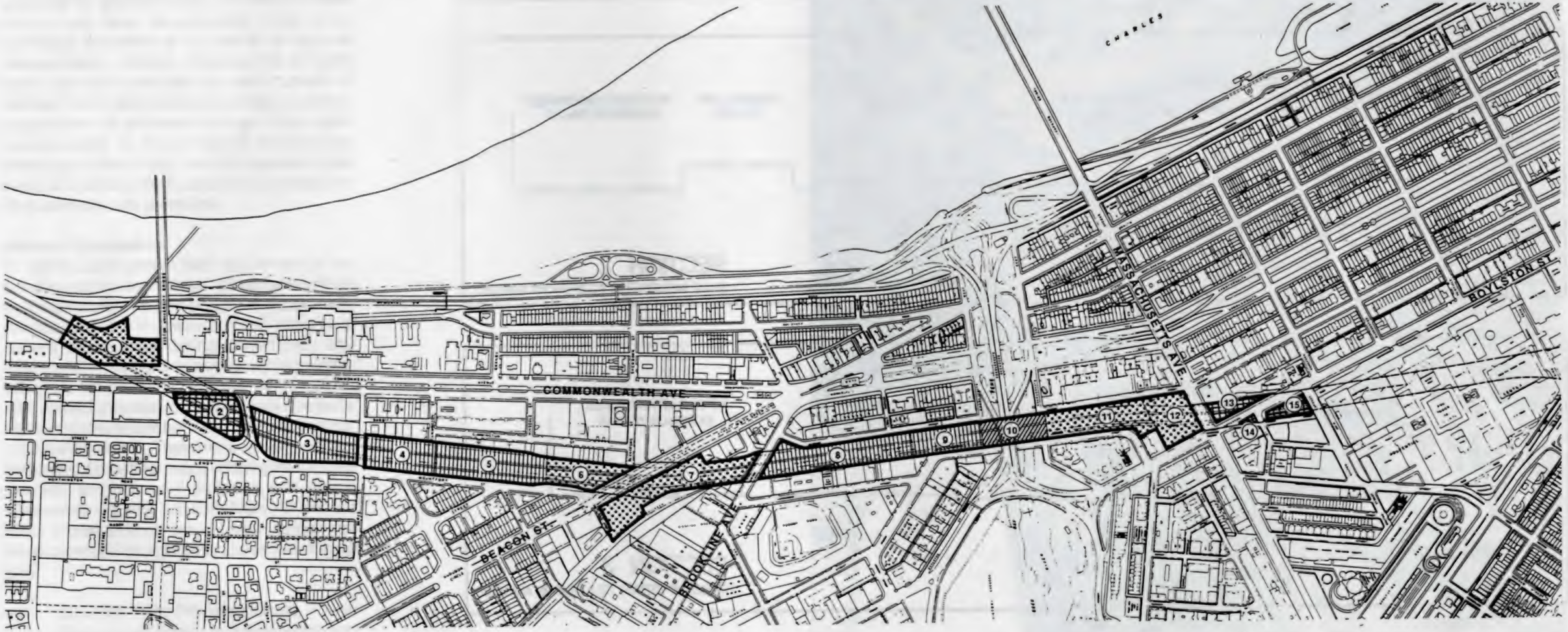


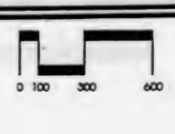
SECTION 3
(TREMONT STREET TO HARRISON AVENUE)

Fig. 2.5

BU Bridge / Kenmore

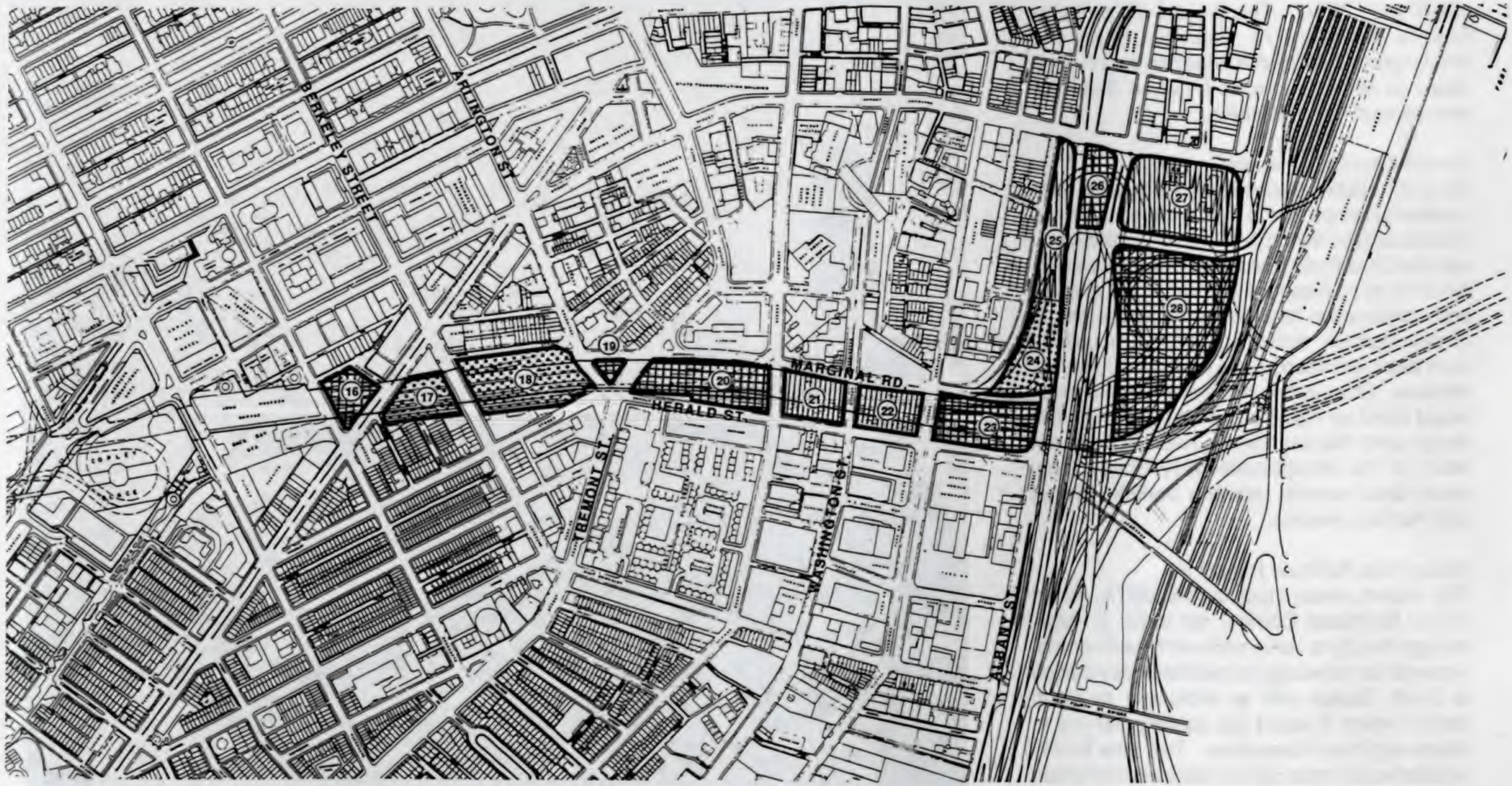
Massachusetts Avenue





Bay Village / Chinatown

South Bay



DEVELOPMENT OPTIONS

PLATFORM CONSTRUCTABILITY

- A Least Constrained
- B Moderately Constrained
- C Highly Constrained
- D Environmentally Constrained

Parcel No.	Ranking	Complexity Factor
1	B	Grade Changes
2	C	Site Configuration
3	A	---
4	A	---
5	A	---
6	B	Site Configuration
7	A-B	Site Configuration
8	A	---
9	A	---
10	D	Environmentally Constrained
11	B	Grade Changes
12	B	Site Distance Restriction
13	C	Configuration and Bridge
14	C	Configuration and Bridge
15	C	Configuration and Bridge
16	C	Configuration and MBTA Station
17	B	MBTA Station
18	B	T Structure and Entrance Ramp
19	C	Site Configuration and Bridge
20	C	MBTA Tunnel
21	A	---
22	A	---
23	C	Site Configuration and Bridge
24	B	Site Configuration
25	A	—
26	C	Tunnel Configuration
27	A	—
28	C	Interchange Geometry

Fig. 2.6

Specific Constraints on Individual Parcels
Any air rights construction will have to maintain turnpike and railroad operations and protect nearby bridge structures and utilities. However, the level of difficulty - and thus, the cost - will vary significantly from parcel to parcel. Parcels have been ranked below on a scale in which A represents the least complexity and C the most. Parcel constructability was rated by (1) the physical constraints to air rights development identified in Figure 2.5, (2) the ability to maintain acceptable levels of turnpike operation during platform installation, and (3) site-specific complexities (see Figure 2.6). Conditions evaluated include existing below-grade facilities which must be protected, such as the MBTA transit tunnels or the Muddy River conduit; special operations, such as Back Bay Station; the shape of the site; and other sensitive adjacent facilities, such as ventilation systems, bridge or wall structures, or building foundations.

The table in Figure 2.6 lists these parcel ratings. Development constraints on each air rights parcel are summarized in the Parcel Analysis section of the appendix.

Future Facilities
A number of regional transportation projects now in the conceptual planning or engineering stages could affect air rights development in the turnpike corridor. It is difficult to determine in advance with any precision what constraints they might impose on future air rights development, but some of these potential impacts can be anticipated.

Central Artery/Tunnel (CA/T) Project
This project, which is in various stages of planning, design and construction, will have major impact on the shape of air rights development parcels and their accessibility. Several ramp scenarios, both to and from the local street network as well as to and from the turnpike, are currently under study and could significantly affect the shape and use of any air rights parcels in this area.

Amtrak Electrification
Amtrak is currently planning to electrify its tracks north of New Haven, where northbound trains currently shift to diesel-powered locomotives before continuing to South Station in Boston. As a result, allowance will have to be made for higher vertical clearances to accommodate power lines between Clarendon Street and Harrison Avenue.

Washington Street Replacement Transit
The MBTA is planning to replace the Orange Line transit service previously located on Washington Street. This project will probably require widening or reconstructing the Washington Street bridge, affecting the ultimate shape of air rights parcels between Shawmut Avenue and Tremont Street.

Turnpike Access Changes
Several possible revisions in the location and function of ramps to and from the turnpike have been discussed during development of this study with the City of Boston and CA/T project planners. All of the ramp locations studied would change both construction requirements and the shape of development parcels. Two key locations have been identified where new ramps may be feasible. One, in the Kenmore Square area, would affect air rights parcels between the BU Bridge and Massachusetts Avenue, and the other, in the Arlington/Berkeley Street area, would affect parcels between Berkeley Street and Harrison Avenue.

Cross-Town Railroad Project
This project, under study by the MBTA, would enable Northeast Corridor rail traffic to cross through the city to serve northern New England. A new rail tunnel would connect Back Bay Station to South Station with an extension to North Station where it would join existing service to Maine and New Hampshire. This new facility would affect air rights parcels between Clarendon Street and Harrison Avenue. It would also prohibit the construction of an Arlington Street east-bound on-ramp.

Other proposed projects include the MBTA's Circumferential Transit service, which would cross beneath the turnpike in the area of St. Mary's Street, and two projects proposed in this report - expansion of the Yawkey rail station to a full-service facility and upgrading the currently substandard turnpike alignment at Massachusetts Avenue.

View of the turnpike and rail corridor at Harrison Avenue crossing.

3. OPPORTUNITIES

The air rights above the turnpike in Boston and Brookline present a rare set of opportunities to create valuable new land. By decking over the open turnpike cut, it will be possible not only to re-knit neighborhoods historically divided and improve the pedestrian environment but also to provide sites for institutional growth and new parking without displacing neighborhood residents or existing uses. These new development opportunities do not stand alone: they are intimately linked with better access to the turnpike as well as improved public transportation links and open space.

ACCESS ALTERNATIVES

Three sections of the turnpike were identified as locations where additional ramps might be feasible: Kenmore Square, the Bowker Overpass at Charlesgate, and the Arlington and Berkeley Street area in Bay Village. These sections were identified as the only areas with the relatively long uninterrupted distances necessary for the ramp gradients to connect local roadways to the turnpike. In general, the vertical change in grade for the sections of the turnpike studied is between 20 and 25 feet from roadbed to city street or air rights platform, requiring a ramp length of 800 to 1000 feet for a comfortable and safe transition. Developing additional ramps in this section of the turnpike is also complicated by the restricted width of the right-of-way, by already-developed properties along both the northern and southern edges of the roadway, by railroad and transit operations along its entire length, and by the space required for turnpike toll plazas which might accompany new ramps.

Kenmore Square

A number of ramp scenarios appear to be technically feasible south of Kenmore Square, including ramps connecting to a private parking garage, to public streets, or to a combination of the two.

1. East and westbound ramps to and from a private parking garage located between St. Mary's and Beacon Streets (see Figure 3.1). These ramps would require relocation of the Conrail tracks and the turnpike roadway between Commonwealth Avenue and Brookline Avenue, as well as reconstruction of all or portions of the St. Mary's Street and Beacon Street bridges.

2. East and westbound ramps to and from a parking garage located between Brookline Avenue and the Bowker Overpass (see Figure 3.2). These ramps would require relocation of the Conrail tracks and the turnpike roadway between St. Mary's Street and the Bowker Overpass, reconstruction of all or portions of the Beacon Street and Brookline Avenue bridges, and inclusion of properties located between the tracks and Lansdowne Street. The existing Massachusetts Avenue westbound on-ramp would have to be closed because traffic entering on this ramp and traffic exiting to the new off-ramp would not have an adequate distance for safe weaving.

3. East and westbound ramps located west of Beacon Street serving general traffic (see Figure 3.3). Construction of these ramps would require relocation of the Conrail tracks and the turnpike roadway from Commonwealth Avenue to Brookline Avenue and reconstruction of the St. Mary's and Beacon Street bridges. Toll plazas would not be required on these ramps.

4. East and westbound ramps located east of Brookline Avenue serving general traffic (see Figure 3.4). Construction of these ramps would require relocation of the Conrail tracks and the turnpike roadway from St. Mary's Street to the Bowker Overpass and reconstruction of the Beacon Street and Brookline Avenue bridges, as well as reconfiguration of the local street network. The existing Massachusetts Avenue westbound on-ramp would have to be closed because traffic entering on this ramp and traffic exiting to the new off-ramp would be too close for safe weaving distances. Toll plazas would be required on both ramps.

5. East and westbound ramps to and from a parking garage located between St. Mary's and Beacon Streets, in combination with east and westbound ramps located east of Brookline Avenue serving general traffic (see Figure 3.5).

6. East and westbound ramps to and from a parking garage located between Brookline Avenue and the Bowker Overpass, in combination with ramps to and from Brookline Avenue also appear possible (see Figure 3.6).

Kenmore Square Study Area.

(Photo courtesy of Aerial Photos International, Inc.)

ACCESS ALTERNATIVES

KENMORE SQUARE ALTERNATIVE 1

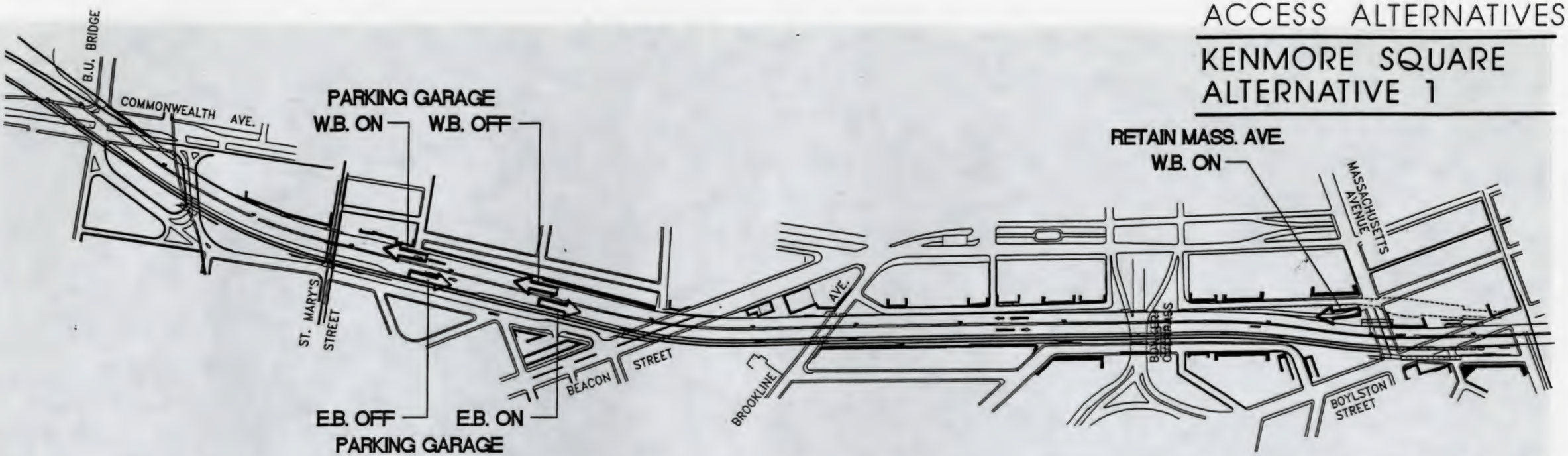
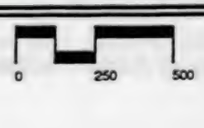
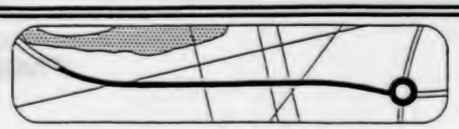


Fig. 3.1





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Quade and Douglas
Bryant Associates
R.D Kimball Associates

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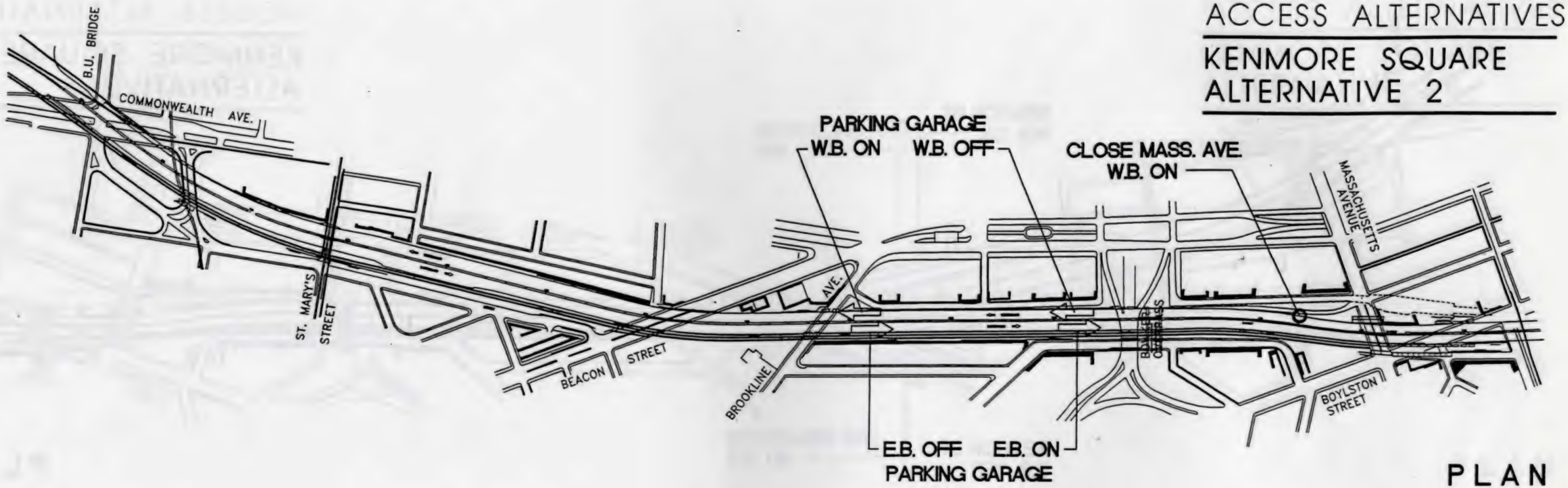
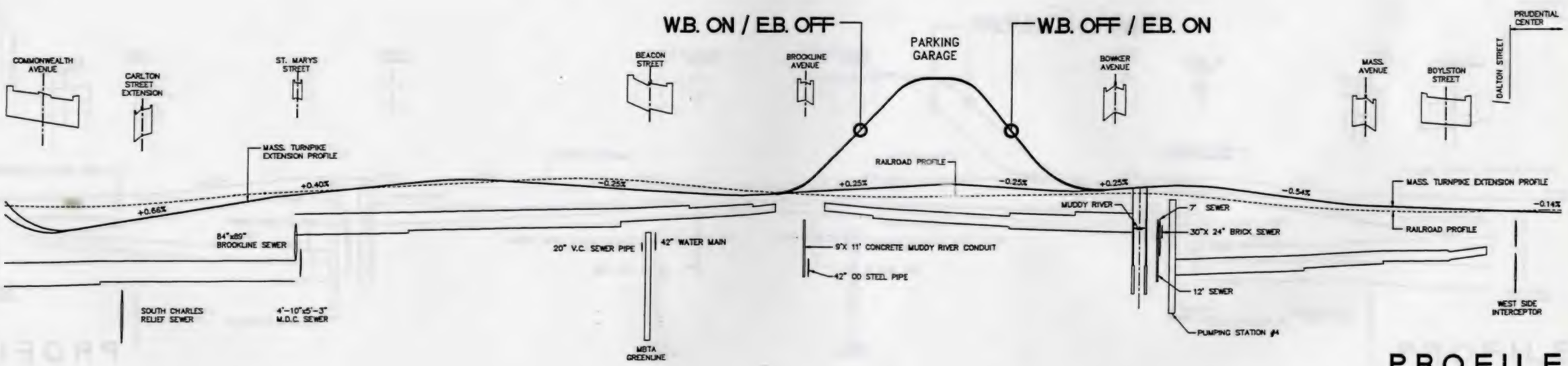
ACCESS ALTERNATIVES

KENMORE SQUARE ALTERNATIVE 2



PLAN



PROFILE

Fig. 3.2

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ACCESS ALTERNATIVES

KENMORE SQUARE ALTERNATIVE 3

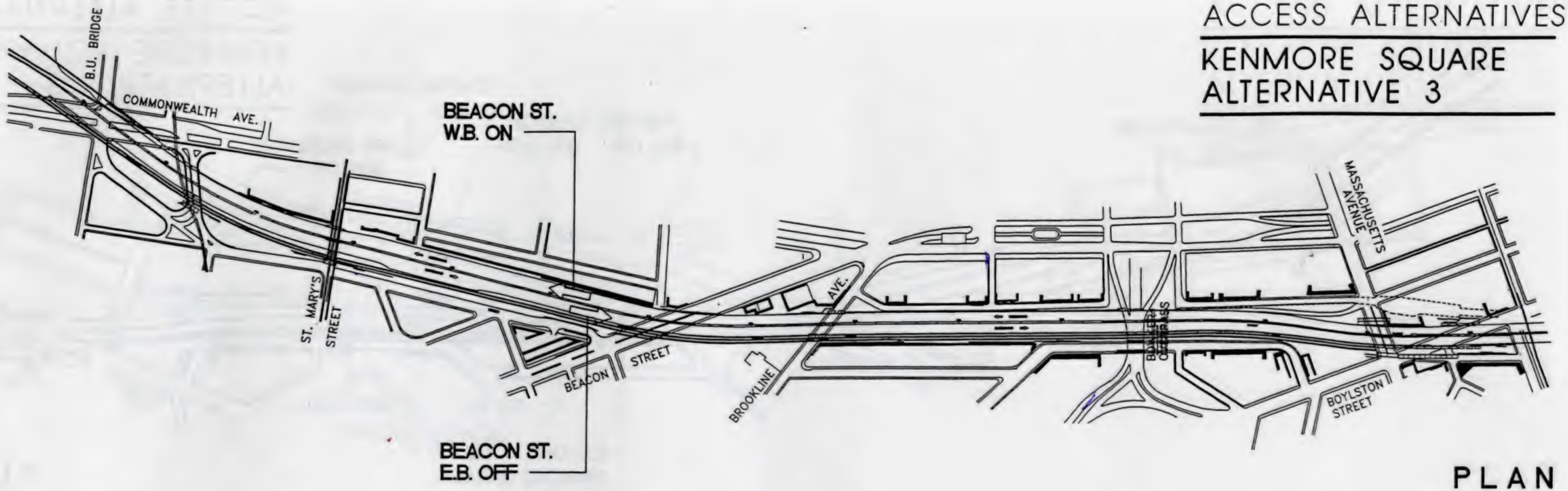
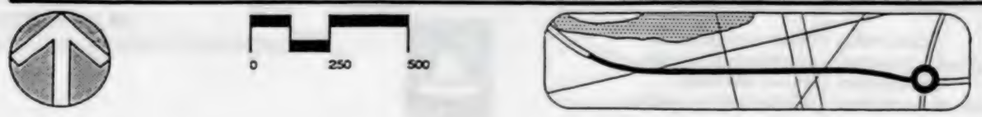


Fig. 3.3



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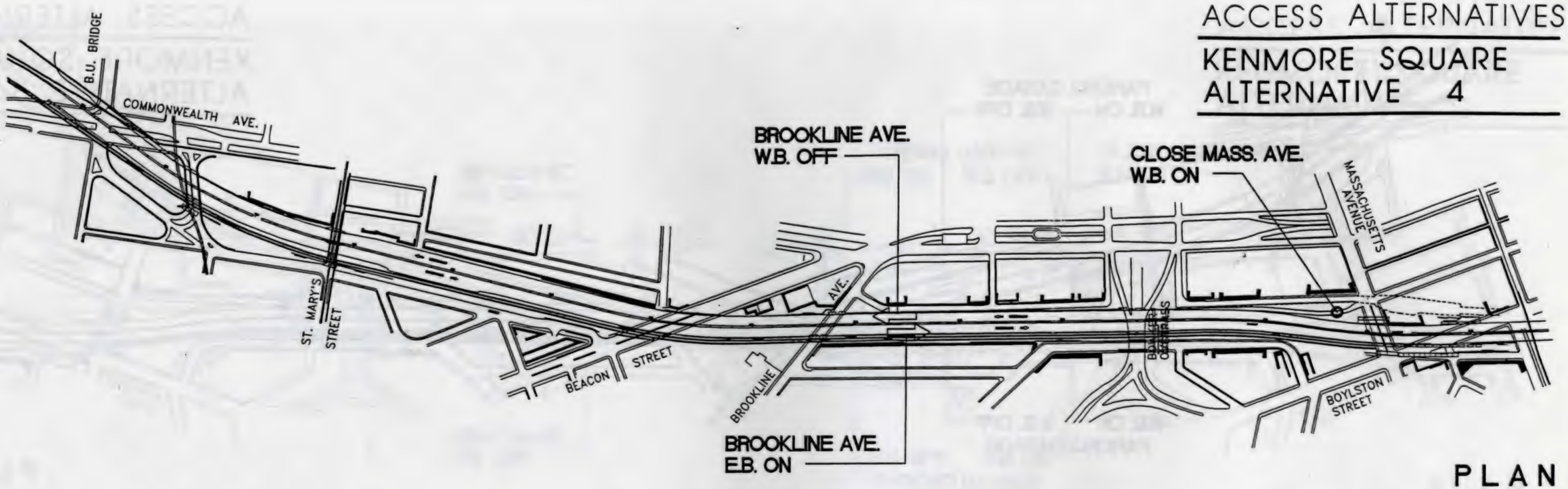
ACCESS ALTERNATIVES

KENMORE SQUARE ALTERNATIVE 4



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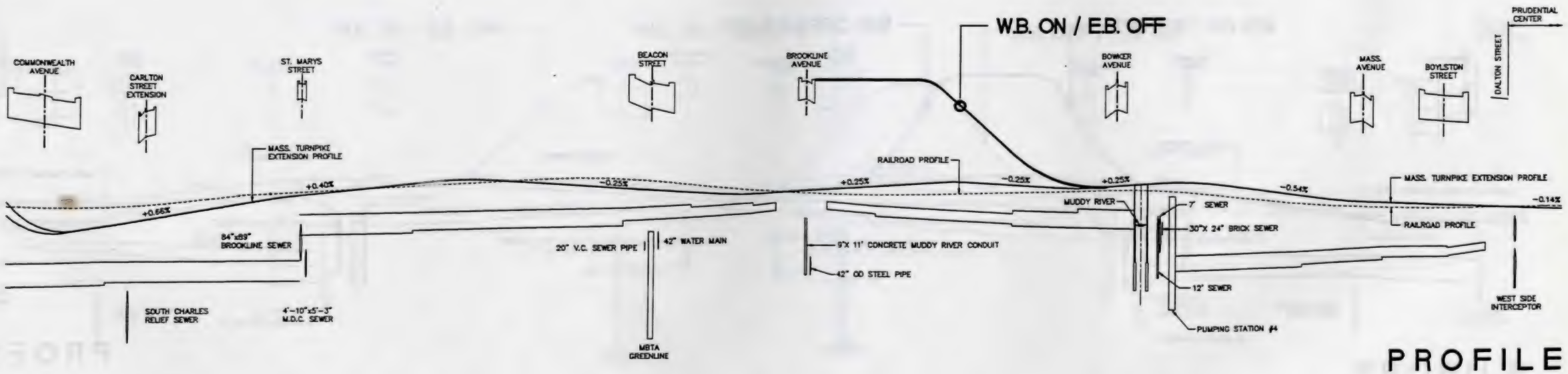

PROFILE

Fig. 3.4

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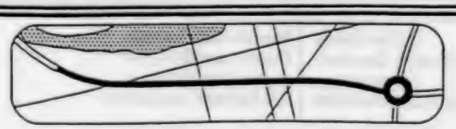

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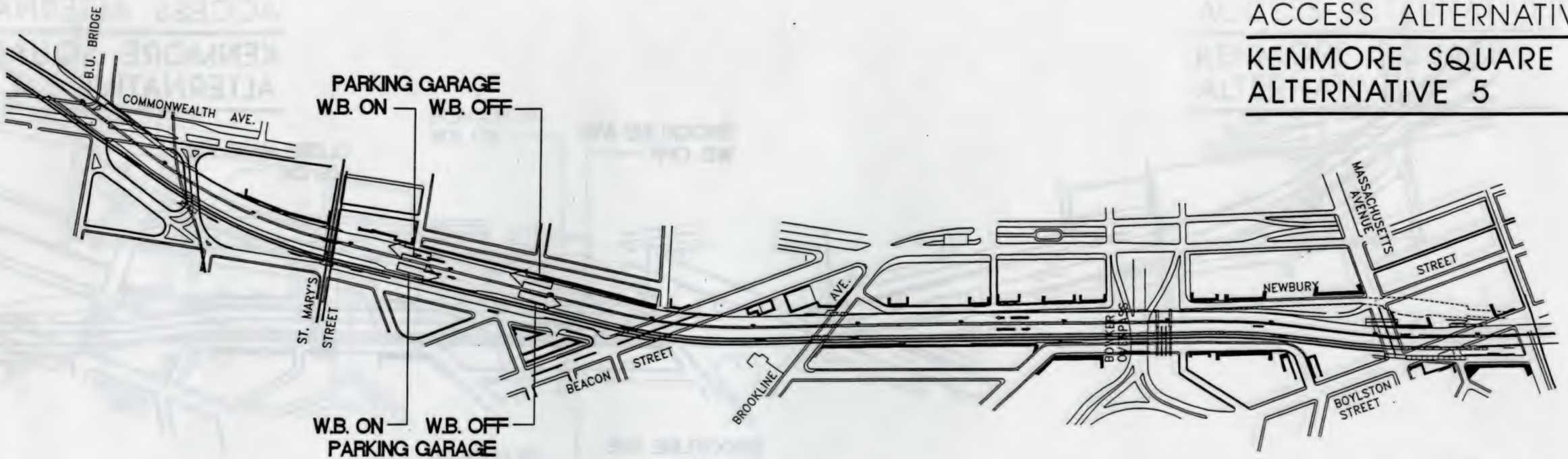
ACCESS ALTERNATIVES

KENMORE SQUARE ALTERNATIVE 5



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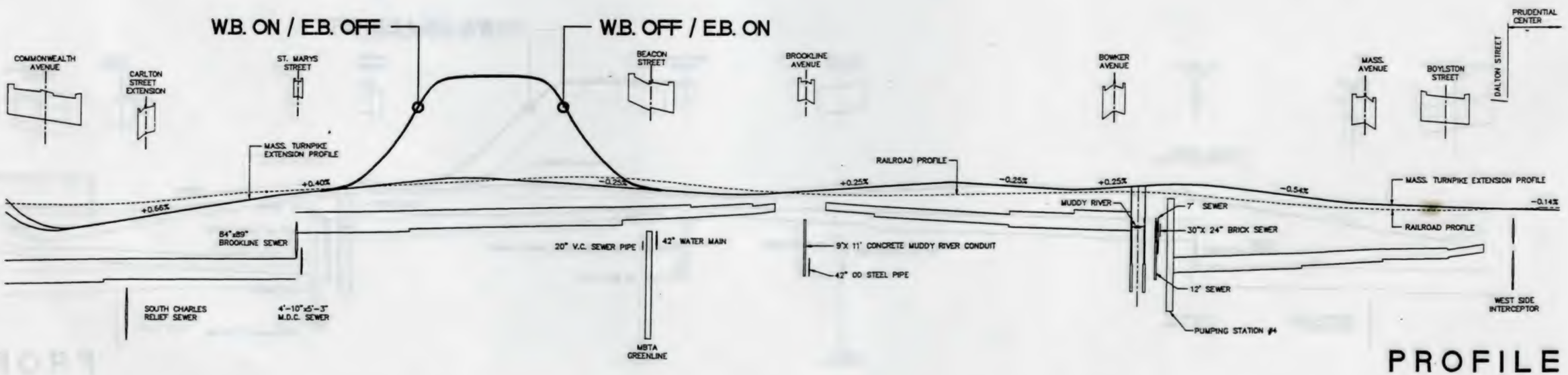

PROFILE

Fig. 3.5

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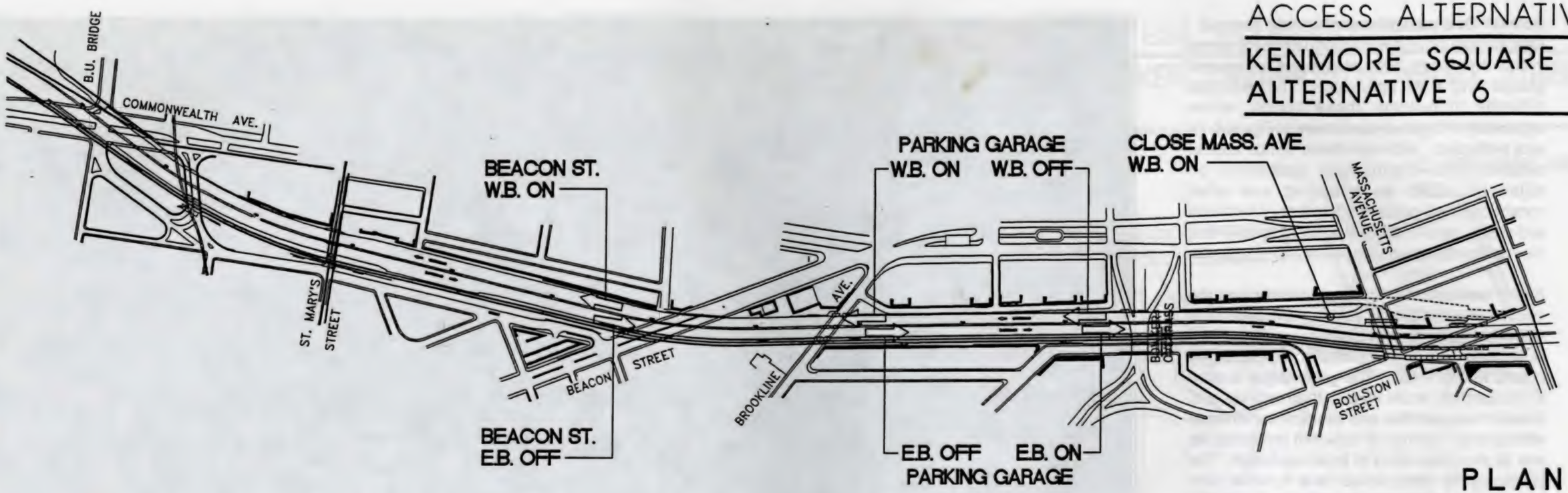
ACCESS ALTERNATIVE

KENMORE SQUARE ALTERNATIVE 6



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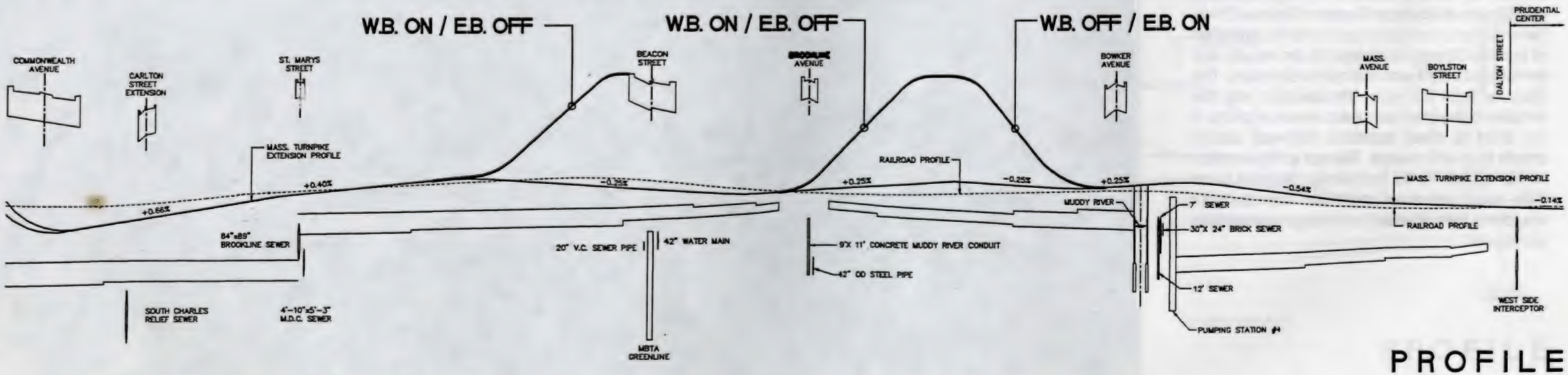

PROFILE

Fig. 3.6

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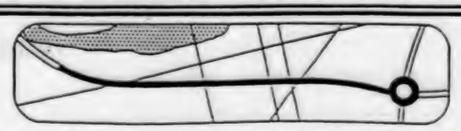

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Bowker Overpass/Massachusetts Avenue
New eastbound and westbound turnpike ramps in this area have been suggested by several groups and local agencies. The technical difficulty of building these ramps, either separately or together (as shown on Figure 3.7), was evaluated. Although these ramps appear constructable, maintaining operations on adjacent public ways during and after construction will present a number of technical and safety issues. It does not now appear that they can be designed to meet current standards.

A new westbound off-ramp would replace the existing Massachusetts Avenue on-ramp. The new ramp would require extensive modifications to Newbury Street, and access to some parcels of land would be lost. The geometry of a ramp in this location would be less than optimal, and it does not appear that one could be constructed without major takings of adjacent properties as well as reconfiguration of local roadways. The eastbound on-ramp would have to cross over the railroad easement in order to reach the turnpike roadway. The only location from which this can be done creates a highly problematic intersection at Boylston Street for Storrow Drive, Fenway Park, and ramp-bound traffic. A portion of Ipswich Street would need to be rebuilt, and the railroad tracks would require relocation. The distance from the ramp intersection with the turnpike to the Massachusetts Avenue bridge is too short to meet desirable highway design criteria for a safe merge. Ramps at this location do not appear to be technically feasible since they could not meet minimum standards or would require a release from accepted minimum standards.

Bowker Overpass.

(Photo courtesy of Aerial Photos International, Inc.)

ACCESS ALTERNATIVES

BOWKER OVERPASS/NEWBURY STREET

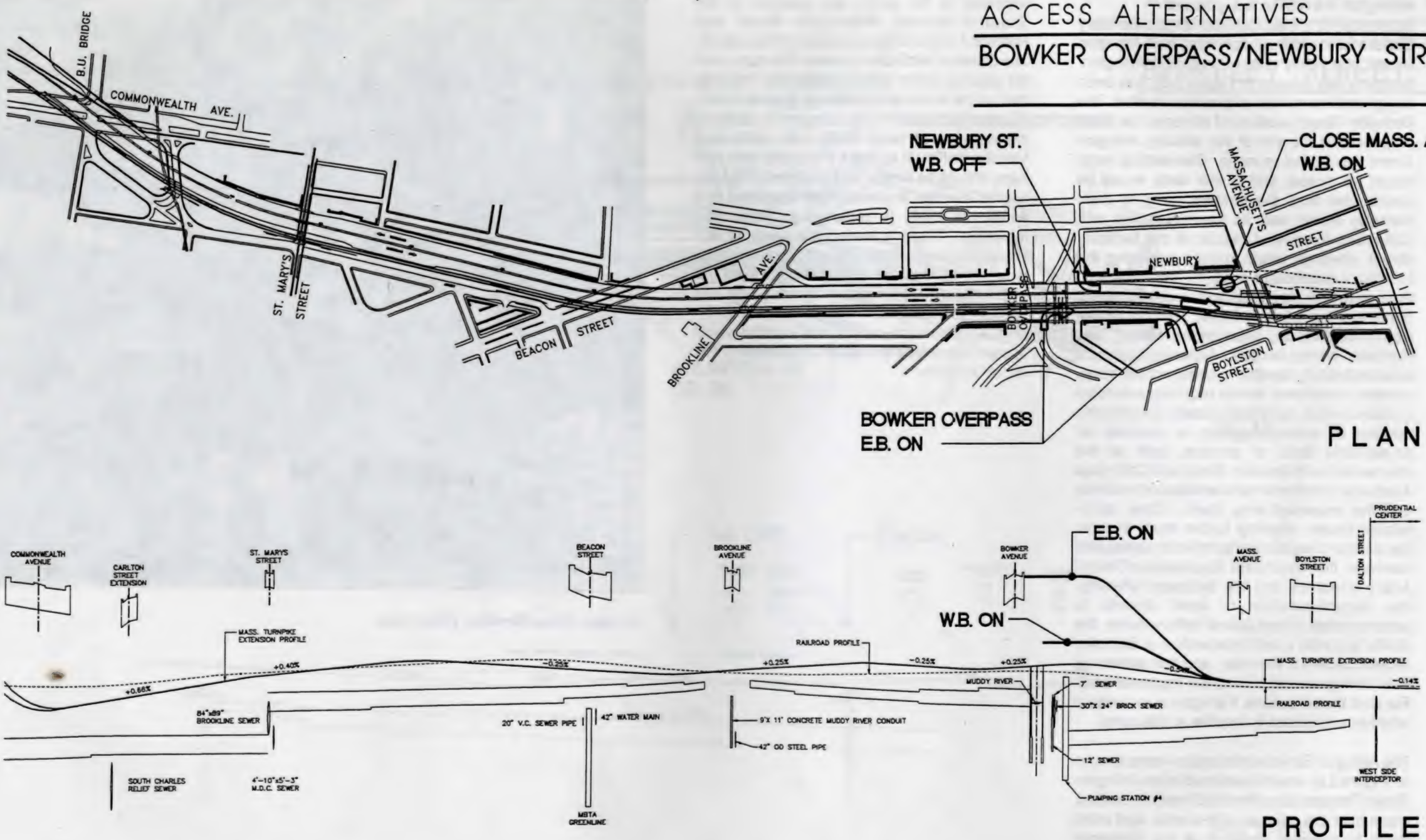

Fig. 3.7

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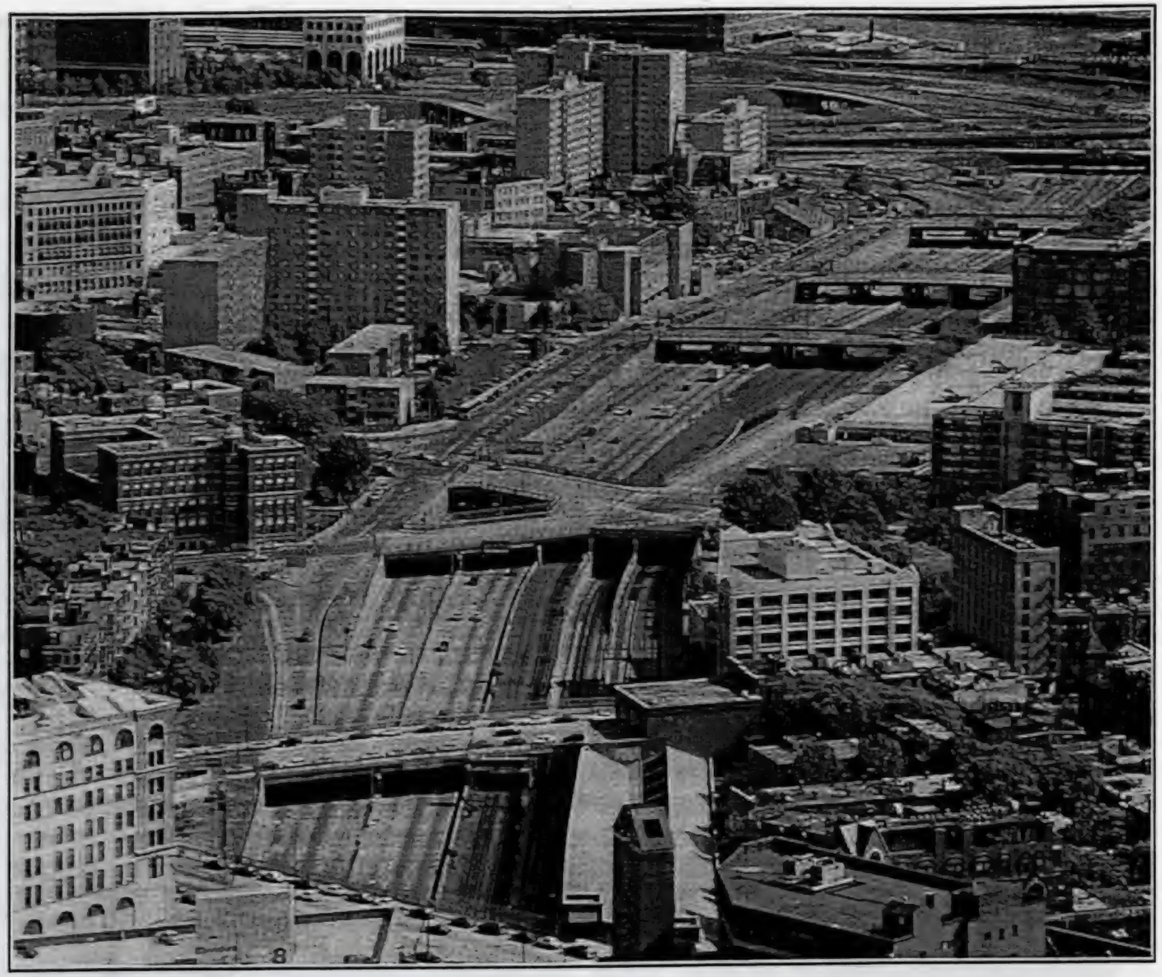
Arlington Street/Berkeley Street

A proposal for a westbound off-ramp to Berkeley Street and an eastbound on-ramp from Arlington Street, commonly referred to as the Arlington/ Berkeley pair (shown in Figure 3.8), has been suggested in a number of previous studies. The Berkeley Street westbound off-ramp has been proposed on the site of the existing Arlington Street westbound on-ramp. The existing ramp would be closed, and a new ramp would be constructed from the turnpike rising to meet Berkeley Street near its the intersection with Columbus Avenue. Creation of the Berkeley Street off-ramp would require widening the turnpike's westbound roadway from Harrison Avenue to Berkeley Street and reconstruction of portions of the Arlington Street, Tremont Street, Shawmut Avenue, Washington Street, and Harrison Avenue bridges. Although it appears to be technically feasible to construct this ramp, several operational issues requiring extensive additional study have been raised, including the number of lanes necessary to maintain an acceptable level of service, both at the intersection with Berkeley Street and Columbus Avenue and on the turnpike westbound roadway and the proposed ramp itself. Other ramp-related issues requiring further study include: the number of westbound turnpike lanes required between the Southeast Expressway/Central Artery on-ramps and the proposed off-ramp; the reconfiguration of local streets to accommodate the additional traffic volume; the ability to create a safe intersection at Berkeley Street/Columbus Avenue; and the amount of land takings required for these improvements. For all of these reasons, it is highly questionable whether a toll plaza is feasible at this ramp.

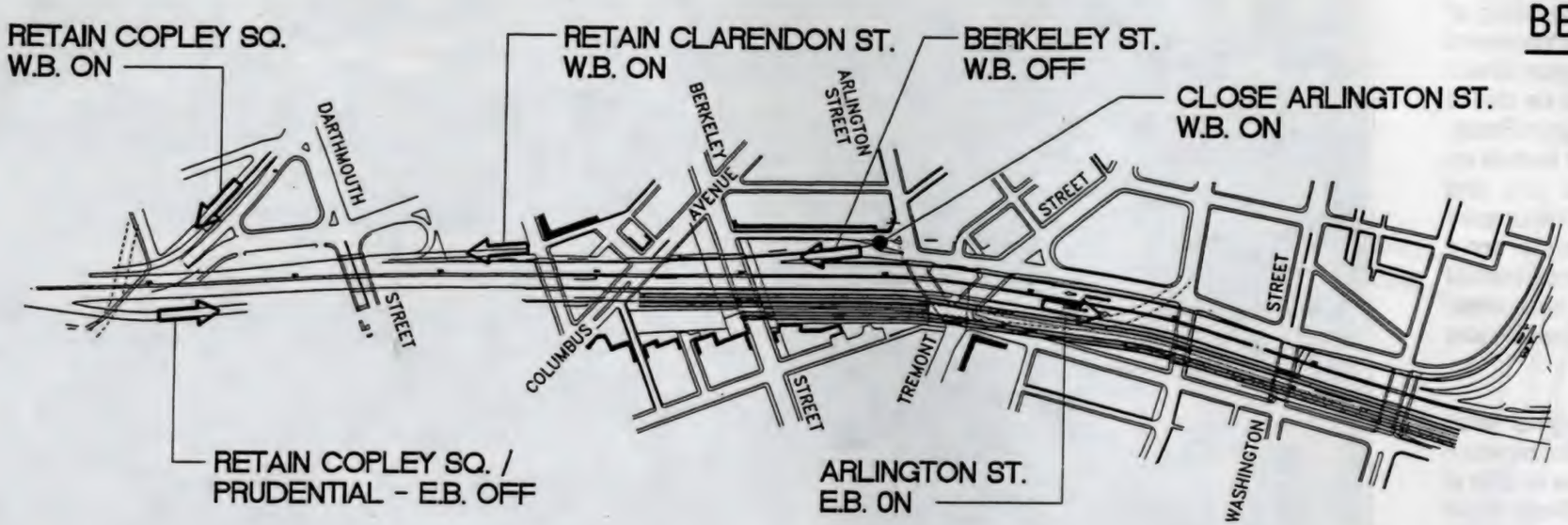
The Arlington Street eastbound on-ramp (shown on Figure 3.8) would be entered at the Arlington Street/Tremont Street/Herald Street intersection, cross over the railroad right-of-way, and ramp down to turnpike elevation at the Shawmut Avenue crossing. In order to accommodate this ramp, the three Amtrak/MBTA tracks and the two Conrail/MBTA tracks would have to be relocated to the south, and portions of the Shawmut Avenue, Washington Street, and Harrison Avenue bridges would have to be rebuilt. The distance available between this ramp and the diverge points, where moves are made to the Central Artery and Southeast Expressway/I-93, does not appear to be adequate to allow for the weaving of ramp traffic with eastbound turnpike traffic. It appears that traffic from this ramp should be limited to Third Harbor Tunnel access in order to assure safe operation, but additional study is required to determine feasibility. There is inadequate space at this location for a toll plaza. This location has also been identified as the preferred location for the alignment of the proposed North/South rail connection through the City. The construction of an eastbound on-ramp in this location would appear to preclude the option of developing this rail connection.



Arlington Street/Berkeley Street Area

ACCESS ALTERNATIVES

ARLINGTON STREET/ BERKELEY STREET



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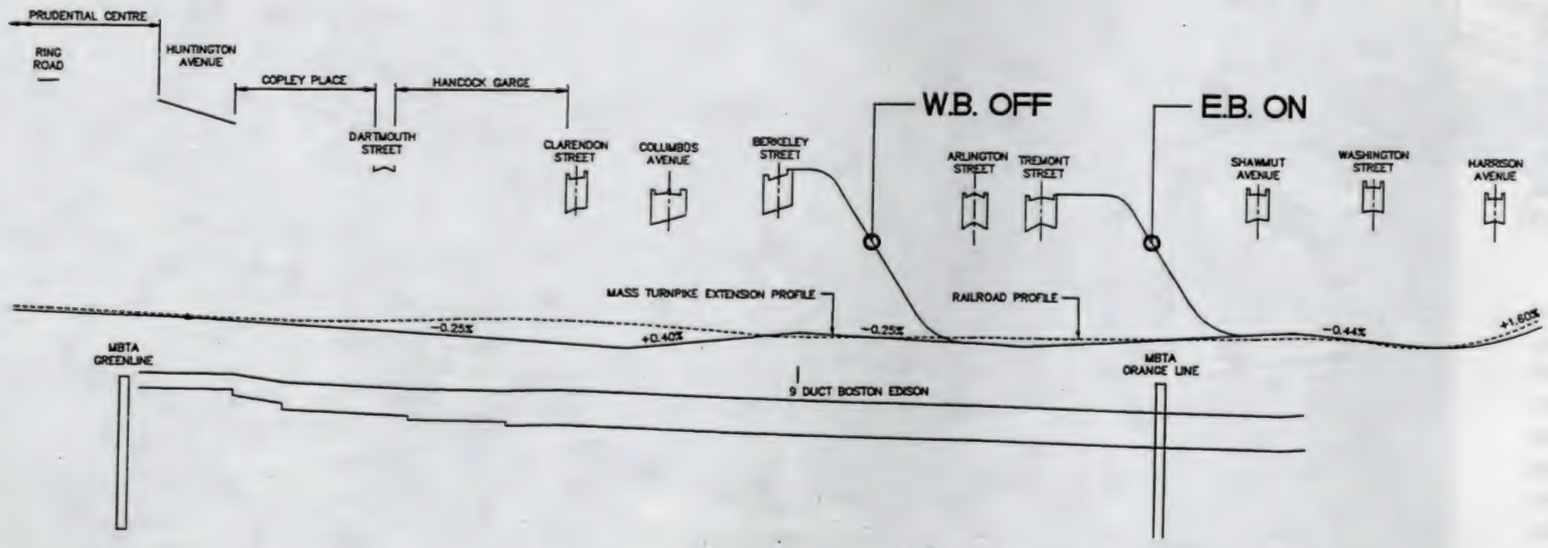

PROFILE

Fig. 3.8

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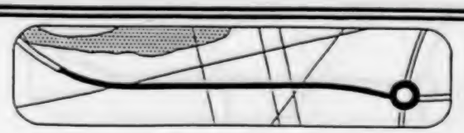

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Herald Boulevard

This proposal recommends the relocation of the CA/T off-ramp from Marginal Road to Herald Street and the widening and upgrading of Herald Street to a four-lane, two-way boulevard between Harrison Avenue and Arlington Street. All or part of Marginal Road would be closed between Harrison Avenue and Arlington Street. The new "boulevard" section would be built on platforms over the MBTA/Orange Line and Amtrak tracks located to the south of the turnpike roadway, with two lanes in each direction and a median strip in the middle. The median would be designed with left-turn lanes at each cross street and attractive landscaping (see Figure 3.9).

The closing or downgrading of Marginal Road would help to reduce traffic conflicts between vehicular and pedestrian traffic in this section of Chinatown. Closure of Marginal Road would also improve the viability of air rights parcels in this sector of the Extension since it would allow for some foundations to be constructed at grade.

Beginning the eastbound roadway at Berkeley Street would allow the reversal of the current traffic direction on Arlington and Berkeley Streets between St. James Street and the new Herald Boulevard. This redirection of traffic is projected to result in a level of service improvement at the Arlington Street/Tremont Street/Herald Boulevard intersection.

In theory, Herald Boulevard could, in conjunction with the new CA/T interchange ramps, accommodate the traffic movements for which the Berkeley Street off-ramp and the Arlington Street on-ramp have been proposed. It would create a new arterial roadway, providing access across the turnpike corridor to the southern portion of the Back Bay and the northern portion of the South End. However, extensive additional study will be required to validate this alternative roadway configuration and to determine its potential traffic impacts on Back Bay and South End street networks.

View of turnpike at Chinatown - South End crossings.

ACCESS ALTERNATIVES
HERALD BOULEVARD

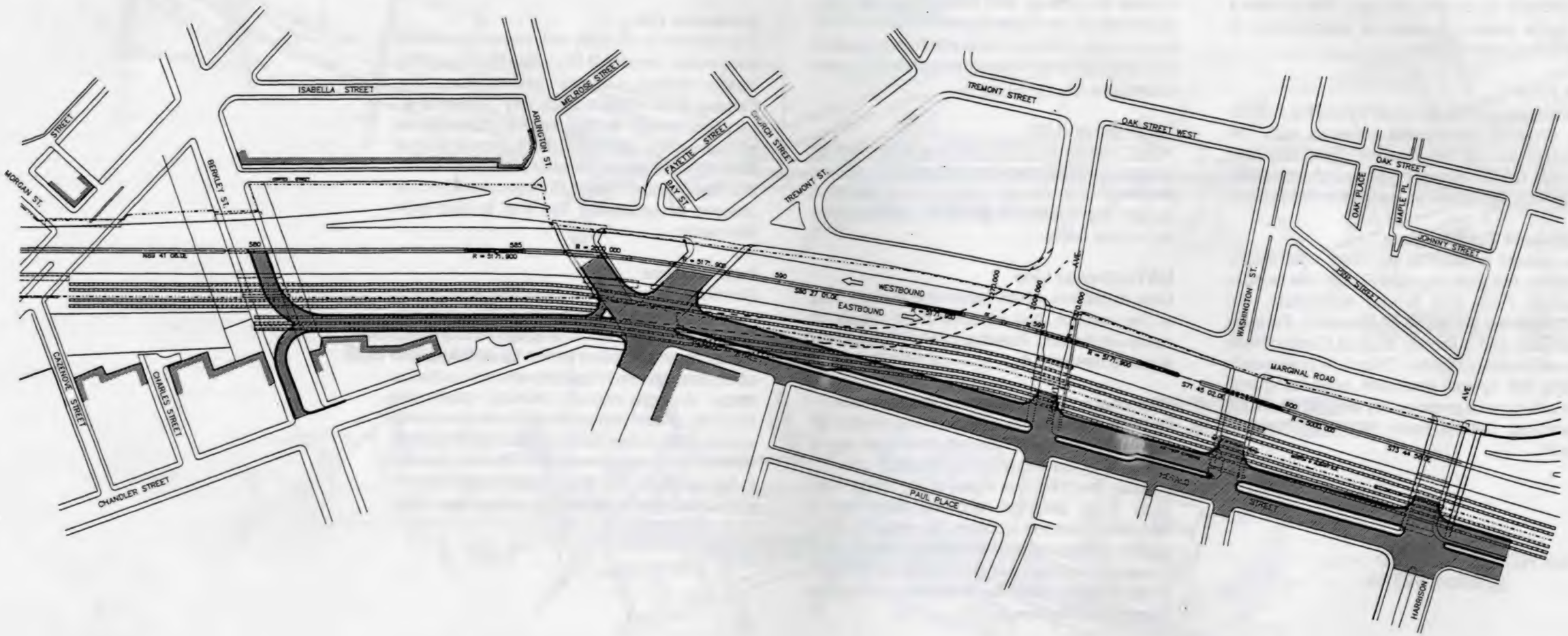
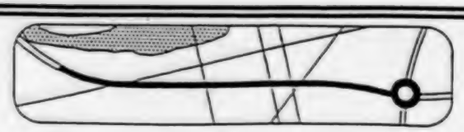


Fig. 3.9



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OPEN SPACE

The turnpike crosses or passes near a number of significant open-space systems. Some, such as the Fens, are of historic interest while others, such as Southwest Corridor Park, are recent additions to the city's landscape. The turnpike's air rights present a series of opportunities to connect or extend them.

The Fens
The historic pedestrian route linking the Fens to the Charles River was severed with the construction of the Bowker Overpass and Storrow Drive. A grade-separated pedestrian crossing could, however, restore this lost access.

Southwest Corridor Park
The newest addition to the city's open-space systems, this park begins at Forest Hills close to Franklin Park and Arnold Arboretum, the southernmost elements of Olmsted's Emerald Necklace, and currently ends at Copley Place above Back Bay Station. This study proposes to extend the system eastward, connecting with new open space proposed by the City above the depressed Central Artery north of Kneeland Street.

PUBLIC TRANSPORTATION IMPROVEMENTS

Public transit is a key element in the overall functioning of the turnpike corridor. Public transit systems which currently serve the corridor include the Orange and Green Line systems, commuter rail, and inter-city commuter and local bus systems. Improvements which could expand the capacity of these transit modes are discussed below (see Figure 3.10).

MBTA/Green Line
About two-thirds of the corridor is served by branches of the Green Line light-rail route. Since the Green Line now operates at or near capacity, system improvements would be necessary to serve new riders.

MBTA/Orange Line
Most of this line, which serves the eastern third of the corridor, has recently been rebuilt or newly constructed. Residual capacity is available to serve new growth.

Washington Street Replacement Service
The MBTA is committed to providing new transit service from Dudley Square to downtown, along the path of the old elevated Orange Line. It appears that trackless trolley is the mode most likely to be selected, and the alignment is tentatively planned to cross the turnpike on a widened Washington Street Bridge. This service would also connect with the Orange and Green Lines and offer cross-radial access to air rights sites in the turnpike corridor.

Circumferential/Crosstown Transit
The MBTA has studied the feasibility of a major new transit route which would directly link growing activity areas and avoid the need for passengers to travel to a central downtown crossing to transfer between radial lines. Initial analysis has earmarked a route from the Ruggles Station/ Longwood Medical Area to Kendall Square in Cambridge as the most likely segment for initial construction. While a final alignment has not been selected, a route crossing the turnpike corridor at St. Mary's Street is one of the alternatives under consideration. The circumferential route with a Green Line transfer station would significantly expand transit service in the BU Bridge/Kenmore area of the corridor.

Commuter Rail
The corridor is currently well served by a major inter-modal transfer at Back Bay Station and by Yawkey Station, a summer seasonal stop near Fenway Park. While Back Bay Station is an excellent modern facility, Yawkey Station could be improved by relocating it to a plaza in front of Fenway Park, where it would be both convenient and highly visible. The MBTA is currently in the process of upgrading this line to and from Worcester.

Inter-city Bus
Currently, inter-city bus lines use a variety of pick-up and drop-off locations in the Back Bay and Park Plaza areas. The Greyhound terminal on St. James Street is slated for removal, and other lines presently operate with only curbside stops. A single inter-city terminal - preferably with inter-modal connections - in the immediate vicinity of Back Bay Station (on air rights at either Clarendon Street to the east or Columbus Avenue to the south) could improve passenger capacity and convenience, as well as reduce bus traffic on local streets.

CORRIDOR STUDY

PUBLIC TRANSPORTATION IMPROVEMENTS

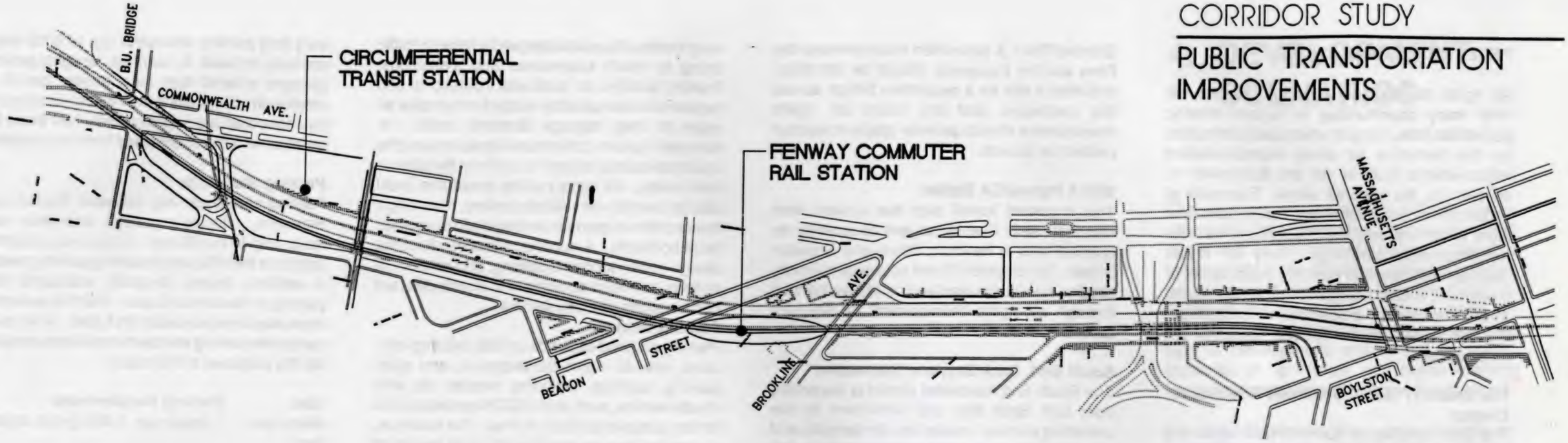

Fig. 3.10

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AIR RIGHTS STUDY
MASSACHUSETTS TURNPIKE AUTHORITY

PEDESTRIAN CONNECTIONS

Air rights development over the turnpike will offer many opportunities to restore missing pedestrian links, many of which were interrupted by the turnpike or other transportation improvements built in an era dominated by concern for the motorist alone. Examples of pedestrian inconvenience and risk, especially at night, were frequently cited by participants in the neighborhood meetings. Any air rights development, whether parking, institutional, or mixed use, should provide for convenient, safe, and attractive pedestrian crossings. Recommendations for specific locations are noted below.

The Beacon / Mountfort Street Residential District
The open turnpike cut currently extends for five blocks along Mountfort Street and the Beacon Street Bridge without a pedestrian crossing to serve the people who live south of the turnpike and walk to Commonwealth Avenue north of the turnpike.

Fenway Park
Boston has one of the few "streetcar ballparks" remaining in this country. A large percentage of dedicated Red Sox fans reach Fenway Park on foot or on public transit. Pedestrian malls could connect Kenmore Station to a plaza large enough to handle pre- and post-game crowds, encouraging further transit use.

The West Fens
Even though this area is a major residential district for both students and permanent residents, there is currently no safe or attractive pedestrian connection between the Fens and Kenmore Square, one of its nearby neighborhood service areas.

Charlesgate
Charlesgate, the missing link between the Fens and the Esplanade along the Charles River, has been severed by both the turnpike corridor and Storrow Drive. A pedestrian route between the Fens and the Esplanade should be identified, including a site for a pedestrian bridge across the roadways, and any future air rights development should provide grade-separated pedestrian access.

MBTA Hynes/ICA Station
This important transit stop has access from Massachusetts Avenue, as well as recently re-opened links to Newbury Street and Boylston Street. The Boylston Street access is currently circuitous and unpleasant and could be enhanced through air rights development of adjacent parcels.

South End, Back Bay, and Chinatown
The South End residential district is separated from both Back Bay and Chinatown by the uninviting corridor created by the turnpike and railroad right-of-way and compounded by the frontage roads, Herald Street and Marginal Road. Many South End residents work in the Back Bay, and much of Chinatown's recent expansion has spread across the turnpike to Castle Square and other South End areas. Air rights development with associated at-grade shops and activities will encourage pedestrian traffic and will foster the re-establishment of links between these neighborhoods.

PARKING STRATEGIES

Parking is a major problem in all the neighborhoods abutting the Boston Extension. Housing densities in the neighborhoods are high, and there is insufficient parking to accommodate residents' needs. In most cases this problem is compounded by a serious shortage of parking to meet the requirements of businesses and institutions on the fringes of the residential areas.

Traffic congestion in the commercial areas and an increase in vehicular intrusion into the residential areas is a related problem in these neighborhoods, created largely by through traffic trying to reach businesses and institutions. Parking facilities for business, institutional and residential uses could be located on turnpike air rights to help manage Boston's traffic. In Kenmore Square, parking developed on air rights could have direct access to and from the pike via new ramps. Air rights parking structures could also be used to consolidate parking, removing it from scattered open-air parking lots in congested neighborhoods. A number of factors affect the design of new air rights parking, and an array of options has been developed to match different combinations of these factors.

Parking Demand
Parking demand depends on both existing local uses, new air rights development, and other parking facilities, including remote lots with shuttle service, such as MASCO's current service for the Longwood Medical Area. For example, a proposal for a seven-story air rights garage at the corner of Clarendon Street and Columbus Avenue focused on meeting existing local parking demand. By contrast, the Copley Place garage, with a combination of turnpike and local access, was built to meet the new parking needs of Copley Place, with its more than two million square feet of mixed-use space. A parking garage on air rights in the Kenmore Square area, on the other hand, could be designed to serve multiple markets: Longwood Medical Area employees shuttled to work by MASCO, BU staff and students, Fenway Park baseball fans, and the employees and customers of local businesses and services.

Parking Access
It is important to note that parking structures with direct access to and from the pike are likely to be larger, longer, and more difficult to locate than parking structures entered from local streets. Turnpike-accessed parking requires ramps 800 feet long or more to climb the 20 to 25 feet for vertical clearance above the roadway. In a few instances, such as Copley Place, the ramp length can be compactly coiled on adjacent property, but if it must parallel the turnpike axis, very long parking structures (up to 1000 feet) are likely to result. By contrast, air rights parking garages entered from local streets can fit in smaller structures since the vertical distances to be connected are approximately half those for garages which are accessed from the turnpike.

Parking Standards
Parking standards vary between Boston and Brookline. Boston's parking standards vary according to conditional zoning requirements, adding to the difficulty of defining parking needs. In addition, federal air-quality standards limit parking in downtown Boston, and this restricted zone may be expanded in the future. As a result, composite parking standards have been adopted for the purposes of this study.

Use	Parking Requirement
Mixed use	1 space per 1,000 gross square feet
Hotel	1 space per room
Institutional	1 space per 1,000 gross square feet
Residential	1/2 space per dwelling unit
Open Space	None

Traffic Studies
Quantitative traffic studies were undertaken for both the BU Bridge/Kenmore and Chinatown/ Bay Village segments of the turnpike corridor by Vollmer Associates. These studies projected traffic congestion and levels of service for each of the scenarios for these areas, based on the parking capacities and access points shown in the alternatives in this study. The amount of parking proposed in each of the scenarios was estimated on the basis of the standards for new air rights development outlined above. No specific parking demand was identified for existing or off-site uses. The findings of the traffic studies are detailed in the Transportation Studies associated with this report.

4. DEVELOPMENT SCENARIOS

The development scenarios outlined below respond to the complexities, opportunities, and constraints in the turnpike corridor outlined in the previous three chapters. These scenarios are not project proposals: they are meant to illuminate the possibilities for the turnpike air rights, to establish benchmarks for density and type of development, and to test the traffic impacts of a range of transportation improvements combined with new development.

Air rights development has great potential in each of the study areas, but it is neither expected nor recommended that every parcel be developed nor that the proposed scenarios be implemented as a single, undifferentiated package. Instead, these scenarios have been explored in turn to get a sense of what they might look like and of how associated impacts might be mitigated. Recognizing that ultimately the type and intensity of turnpike corridor development will be the product of current planning and zoning regulations, substantial local involvement and additional negotiation, this study has relied on both existing zoning envelopes and consultations with planning officials in both Boston and Brookline. Site-specific development proposals will have to be further refined by more careful study of both financial feasibility and local mitigation strategies.

METHODOLOGY

The turnpike corridor was broken into smaller elements for detailed analysis of air rights development potential. At the smallest scale was the individual air rights parcel, usually formed by the edges of the turnpike corridor and the

crossings of local streets - 28 parcels in all, typically the size of city blocks. As described above, under Study Approach, each parcel was individually analyzed and mapped, types of ownership or land control tabulated, and its context described; site conditions or special features affecting development feasibility were also noted. Mapping and data for each parcel are presented in the appendix. Where complex street geometry created irregular parcels, or where parcel sizes and shapes were so fragmented that only by merging them - sometimes with abutting private property - would development be feasible at all, parcels were combined to improve development potential. Combined parcels are identified in the development scenarios where they occur.

At the largest scale, four study areas were assembled, each covering between five and ten air rights parcels. The parcels in each study area share a physical and social context, with common neighborhood issues. As has previously been stated, at least one major transportation improvement is central to each of the study areas. Development scenarios, drawing on the earlier process of public participation and investigation, were then generated for each study area.

BU/Kenmore	Parcels 1-9
Massachusetts Avenue	Parcels 10-15
Bay Village/Chinatown	Parcels 16-23
South Bay Interchange	Parcels 24-28

In two study areas where proposed transportation changes would be especially dramatic, Boston University (BU) Bridge/Kenmore Square and Chinatown/Bay Village, a preliminary traffic assessment has been made of each scenario. A separate study by Vollmer Associates measured existing conditions, projected future no-build volumes for the year 2010, and added the demands of air rights development to arrive at total projected traffic volumes for each of the alternatives in these two areas. All references to traffic estimates and impact assessment in this document refer to the Vollmer study.

BU BRIDGE/KENMORE STUDY AREA
(Parcels 1-9)

The development scenarios for the BU Bridge/ Kenmore study area represent an effort to re-integrate the north and south sides of the turnpike corridor between the BU Bridge and Kenmore Square. Kenmore Square, a distinct commercial district serving Boston University (BU) students and other local residents, also functions as the eastern entrance to BU. The center of the school's boulevard campus along Commonwealth Avenue is bounded by the Square to the east and the bridge (originally the Cottage Farm Bridge, and now commonly known by its BU association) to the west. Parcel 1, which stands over the turnpike just west of the BU Bridge, is a companion air rights parcel whose development prospects are linked to Kenmore Square as well as to the air rights parcels in between. The area around the BU Bridge, however, has become a congested rotary with no real institutional, commercial, or residential presence, while the turnpike corridor itself has few pedestrian crossings in this area.

Three engineering alternatives for new turnpike access are identified for this study area:

1. Turnpike on- and off-ramps in both directions through an air rights parking garage, located east of Brookline Avenue, with limited street access.

2. Turnpike on- and off-ramps in both directions through an air rights parking garage, located between St. Mary's Street and Beacon Street, with limited street access.

3. Turnpike on- and off-ramps in both directions, one pair to the west of and connected to Beacon Street and one pair east of and connected to Brookline Avenue.

A different urban design option is then explored for each of these access alternatives.

All three alternatives protect the Cottage Farm neighborhood from the impact of new development on Commonwealth Avenue by consolidating through-traffic routes and closing key streets and by a small buffer park along Mountfort Street (across from Parcel 2). This new street pattern also rationalizes the Commonwealth Avenue rotary where heavy traffic to and from the BU Bridge, to Storrow Drive, and from Beacon Street via St. Mary's Street all currently converge.

Except for Parcel 2, which is highly constrained by existing diagonal crossings, the constraints in this area range from low to moderate. The turnpike elevation changes beneath Parcel 1, passing under Essex Street and then rising to the west to cross the railroad spur below. Both the Beacon Street and Brookline Avenue bridges rise significantly above adjacent grade elevations for turnpike clearance, and pose engineering and design challenges.

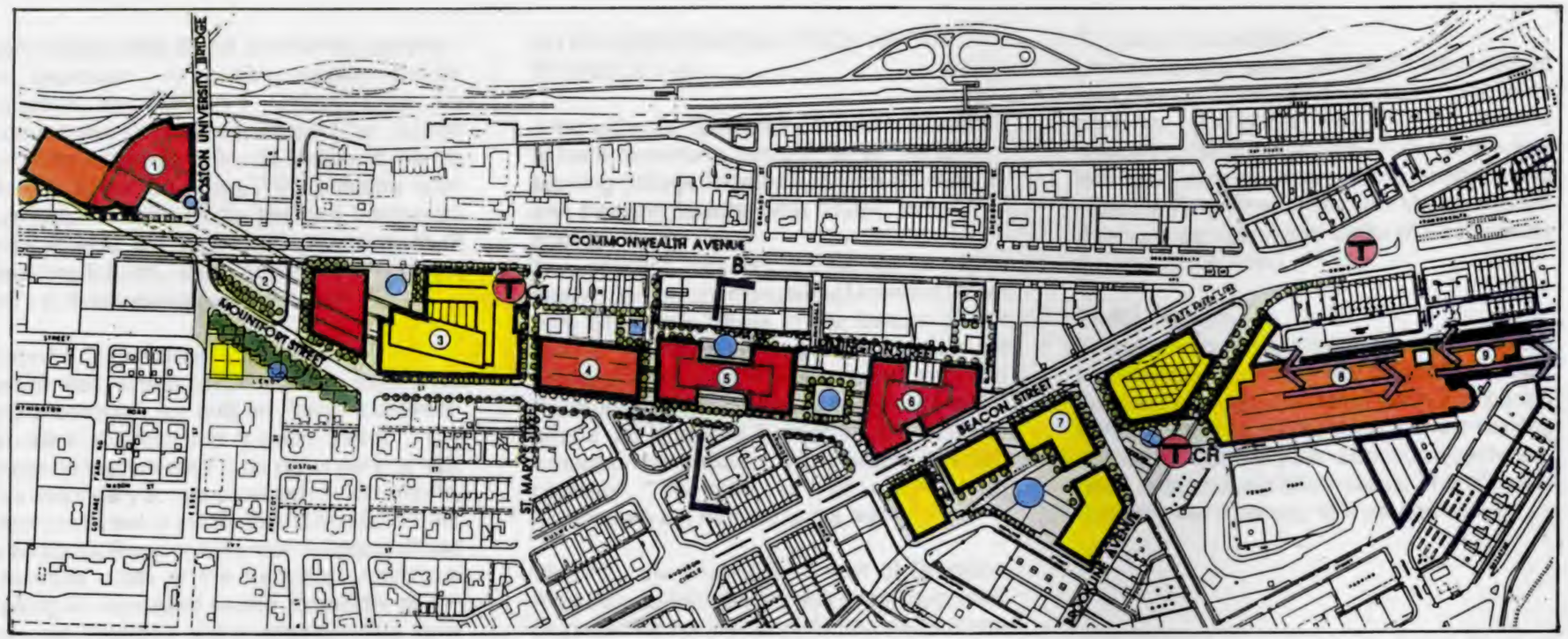
Both the public and private sectors have expressed interest in air rights development in this area. The Town of Brookline is studying changes in land use controls to encourage commercial improvements on Parcels 2 and 3. A private developer has made a proposal for a parking garage spanning Parcels 4, 5, and 6, discussed fully in Alternative 2, below.

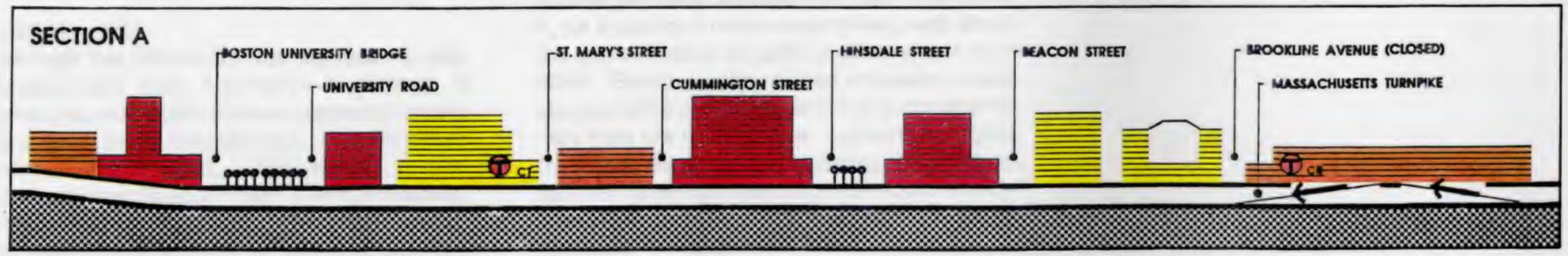
BU BRIDGE/KENMORE STUDY AREA
(Parcels 1-9)

Alternative 1: Turnpike on- and off- ramps in both directions through an air rights parking garage, located east of Brookline Avenue, with limited street access.
In this scenario, a new BU presence above the turnpike provides an alternative to further campus expansion westward along Commonwealth Avenue. This scenario's most striking design feature, however, is a new plaza in front of Fenway Park, bringing a powerful civic presence to this now-concealed city icon. One edge of this plaza is created by ending Brookline Avenue at Yawkey Way, which is then extended to meet Beacon Street at a new intersection south of the turnpike; in addition, Lansdowne Street is converted to a pedestrian mall. Decentralized parking in three locations (rather than a single large garage, as in Alternative 2) permits multiple paths over the turnpike between the campus to the north and the student population as well as other residents to the south. A major air rights parking garage with turnpike ramps is inserted between Fenway Park and Kenmore Square, on Parcel 8 and Parcel 9.

Most of the air rights parcels in this scenario are devoted to institutional uses, including Parcel 1 west of the BU Bridge, while the parcels closer to Kenmore Square support commercial uses, up to 5 million square feet of new construction and close to 5000 parking spaces. The transportation connections and related air rights parking are relatively unobtrusive, particularly by comparison to Alternative 2. Parcel 2 development is limited to local street and bridge improvements.

Urban Design
This scenario reinforces existing uses and improves circulation patterns. It expands the roles of Kenmore Square and the BU Bridge as endpoints of BU's central campus. Two key pedestrian links - between Kenmore Square and Fenway Park, and between student housing





DATA

PARCEL	USE	DU	SITE AREA	FLR AREA	HEIGHT	STORY	FAR	PARKING
1	I/P	—	189,579	520,822	187	17	2.75	462
2	—	—	44,666	—	—	—	—	—
3	MU/I/P	—	304,400	1,404,400	195	15	3.58	400
4	P	—	82,471	433,200	55	5	5.25	1,088
5	I	—	161,600	750,300	195	15	4.64	—
6	I	—	132,090	544,300	145	11	4.12	—
7	MU/P	—	411,404	2,181,200	135	10	4.37	1,088
8	P	—	263,615	1,122,300	55	5	4.25	2,630
9	P	—	73,813	154,000	45	5	2.08	440

DEVELOPMENT ALTERNATIVES

BU BRIDGE/KENMORE

ALTERNATIVE 1

Parcels 1-9

Limited access east and westbound on- and off-ramps located east of Brookline Avenue.

LEGEND

BUILDINGS

- R Residential
- MU Mixed Use
- I Institutional
- P Parking

LANDSCAPE

- Open Space
- Landscape Edge
- Recreation Feature
- Landscape Feature

TRANSPORTATION

- Existing Ramp
- Proposed Ramp
- Transit Stop
- CR Commuter Rail Stop
- CT Circumferential Transit (Future)
- RR Railroad Station
- TT Trackless Trolley
- Traffic Direction

Fig. 4.1

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south of Mountfort Street and the BU campus - are improved. A possible transfer station between the MBTA's Green Line on Commonwealth Avenue and a future circumferential transit line is shown at the St. Mary's Street crossing. The scheme also connects Olmsted Plaza and the Longwood Medical Area with new development south of Kenmore Square, which serves as a northern entry to these nearby activity zones.

Turnpike Connections
New limited-access turnpike ramps, eastbound and westbound, are built on Parcel 8 between Brookline Avenue and Ipswich Street. The ramps connect directly to air rights parking with only secondary access provided to local streets, Kenmore Street to the north and Ipswich Street to the south. Ramp construction requires railroad relocation south of the turnpike; additional parking is developed on the remainder of the acquired property, above entertainment uses on Lansdowne Street.

Traffic Impacts
Although this alternative has significantly less development than Alternative 3 (below), it generates more traffic on area roadways, largely as a result of the land use mix. The Brookline Avenue realignment, while adding a new intersection on Beacon Street, diverts a roadway from the already-congested Kenmore Square. Current traffic congestion at both the BU Bridge and Kenmore Square intersections is relieved.

BU BRIDGE/KENMORE STUDY AREA
(PARCELS 1-9)

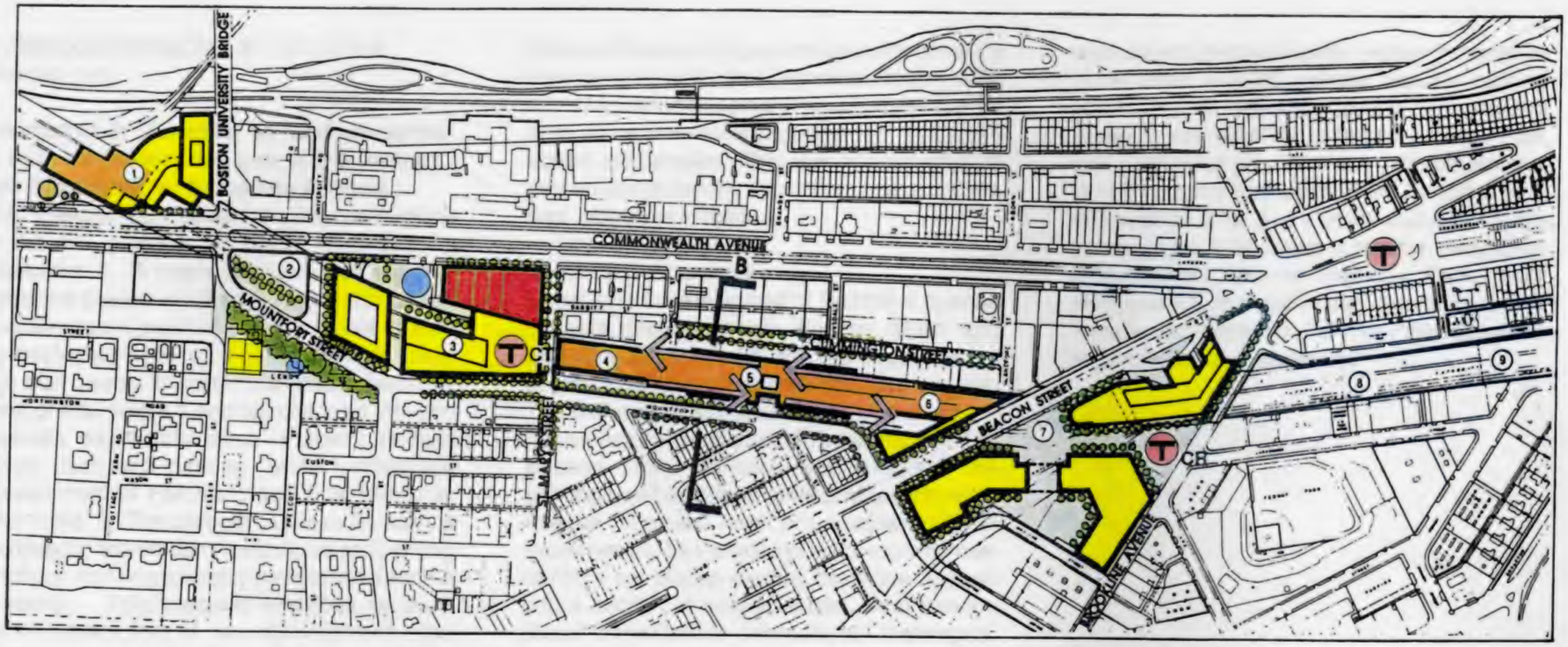
Alternative 2: Turnpike on- and off-ramps in both directions through an air rights parking garage located between St. Mary's and Beacon Streets, with limited street access.
This scenario includes a 2000-car air rights parking garage extending along Mountfort Street from St. Mary's Street to the Beacon Street Bridge. Connecting mixed-use development nodes at either end, Parcel 1 to the west and Kenmore Square to the east, this garage would create an effective barrier to BU campus expansion southward; as a result, it would channel institutional growth along Commonwealth Avenue to the west.

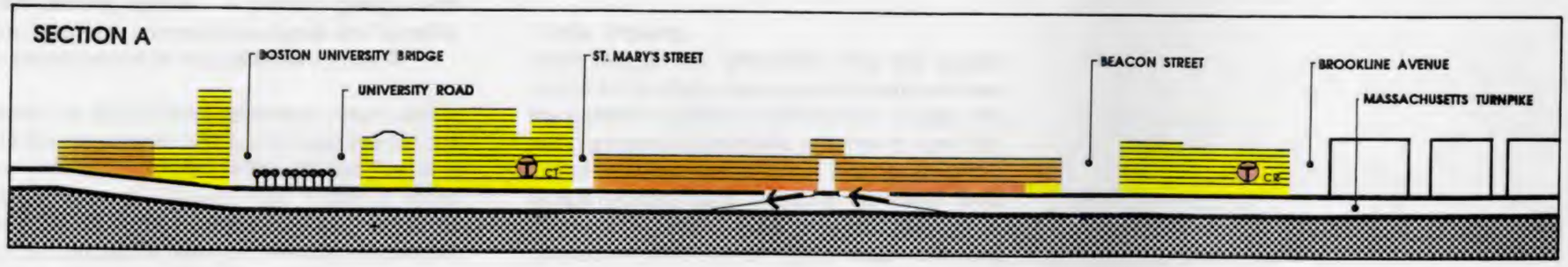
With no new development east of Brookline Avenue, and only parking with street-level retail proposed for the intermediate parcels between nodes, this scheme has approximately 1 million square feet less development than Alternative 1, for a total of 4 million square feet, and about the same number of parking spaces, just over 5000. Except for the railroad relocation noted above and the constraints in Parcel 2, constraints vary from low to moderate. Locating air rights parking to the west and reducing the scale of commercial air rights development would simplify construction on Parcel 1; no development is proposed for Parcels 8 and 9.

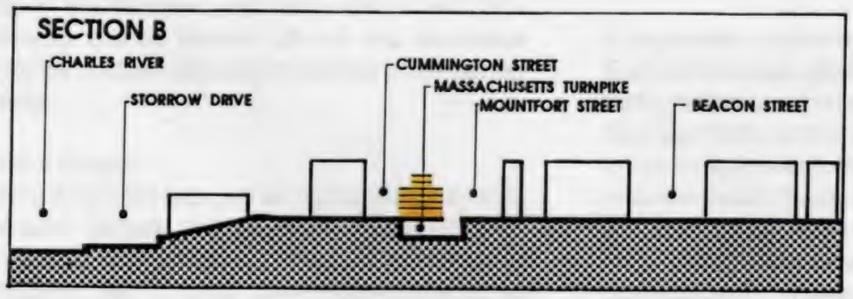
Urban Design
A large mixed-use office, research, and hotel complex in a triangular pedestrian zone is oriented toward Kenmore Square. This triangle is bounded to the south by an extension of Burlington Street, which extends to meet Mountfort Street at a new Beacon Street crossing. Landscaping and architectural treatment could reduce the impact of the 1500-foot wall of the parking garage on the residential area along Mountfort Street, where there is also a central pedestrian crossing, but the structure would nonetheless dominate the area.

Turnpike Connections
Limited-access ramps between St. Mary's Street and Beacon Street are connected to air rights parking. Two-lane ramps would require relocating the railroad to the south. These new ramps at Kenmore Square would permit removal of the Newbury Street on-ramp at Massachusetts Avenue (also discussed under Massachusetts Avenue Study Area).

Traffic Impacts
This alternative shows the smallest net increase in local traffic volumes of any of the alternatives, because the highway-bound traffic is captured before it reaches local streets. Direct parking access from St. Mary's and Beacon Streets also helps reduce local traffic impacts. This scenario uses the same penalty tolls as Alternative 1.







DATA

PARCEL	USE	DU	SITE AREA	FLR AREA	HEIGHT	STORY	FAR	PARKING
1	MU/P	—	189,579	952,511	187	16	5.02	848
2	—	—	44,666	—	—	—	—	—
3	MU/I/P	—	304,400	1,548,300	195	15	3.6-4.6	400
4	P	—	82,471	283,800	55	6	3.40	735
5	P	—	131,600	448,800	55	6	3.40	1,168
6	P	—	102,090	390,000	55	6	4.00	770
7	MU/P	—	411,404	2,262,000	135	10	4.60	1,086
8	—	—	263,615	—	—	—	—	—
9	—	—	63,313	—	—	—	—	—

DEVELOPMENT ALTERNATIVES

BU BRIDGE/KENMORE ALTERNATIVE 2

Parcels 1-9

Limited access east and westbound on- and off-ramps located between St. Mary's and Beacon Streets.

LEGEND

BUILDINGS

- R Residential
- MU Mixed Use
- I Institutional
- P Parking

LANDSCAPE

- Open Space
- Landscape Edge
- Recreation Feature
- Landscape Feature

TRANSPORTATION

- Existing Ramp
- Proposed Ramp
- Transit Stop
- CR Commuter Rail Stop
- CT Circumferential Transit (Future)
- RR Railroad Station
- TT Trackless Trolley
- ← Traffic Direction

0 125 250 500

Fig. 4.2

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BU BRIDGE/KENMORE STUDY AREA
(Parcels 1-9)

Alternative 3: Turnpike on- and off-ramps in both directions, one pair to the west of, and connected to, Brookline Avenue.
This scenario adds direct turnpike connections to the BU campus air rights expansion in Alternative 1. A major air rights mall south of Kenmore Square on Parcel 7 connects paired turnpike ramps west of Beacon Street to their complementary pair east of Brookline Avenue. The mall bisects the large triangular mixed-use zone of Alternative 1 and subdivides it into two separate commercial sites. Parcel 1 houses mixed uses and parking, while institutional development in Parcels 5 and 6 is similar to Alternative 1. The parcels between St. Mary's and Beacon Streets carry institutional and parking functions and provide easy pedestrian turnpike crossings. This scenario envisions up to 6 million square feet of new development - the largest amount of the three options - and over 6000 parking spaces. A parking garage with direct turnpike connections stands on Parcel 8; no development is proposed for Parcel 9.

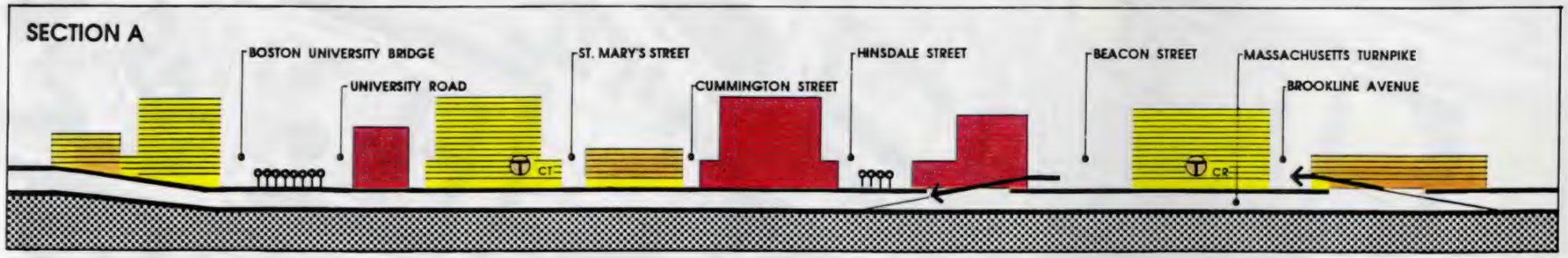
Except for the railroad relocation noted above and the constraints in Parcel 2, constraints vary from low to moderate. Although the Parcel 7 mall in front of Fenway Park replaces more intensive air rights development on that site, it also enhances the value of the adjacent parcels to the north and south. The air rights roadway above the turnpike and its junctions with the abruptly arched Beacon Street and Brookline Avenue bridges will require further engineering study.

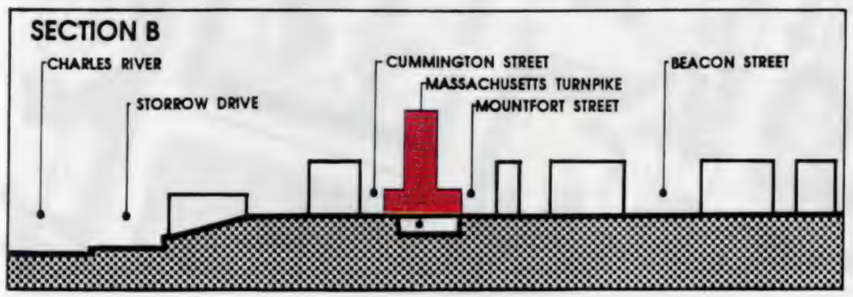
Urban Design
At the Kenmore area, an air rights mall connects Beacon Street and Brookline Avenue and accesses the turnpike ramps at either end. Together with a small pedestrian plaza at its Brookline Avenue corner, this mall offers a significant urban plaza that stretches to Fenway Park. Putting air rights parking between Fenway Park and Kenmore Square reduces the garage's visual impact and frees the parcels further west along Mountfort Street for institutional expansion and more convenient pedestrian pathways across the turnpike. This scenario provides 20 percent more parking than Alternative 2 but in a less obtrusive location.

Turnpike Connections
Direct-access ramps east of Brookline Avenue connect directly to both Beacon Street and Brookline Avenue, with optional direct parking access available to the Brookline Avenue pair. The two ramp pairs would offer all the vehicle movements of a full diamond interchange. The Beacon Street on-ramp would replace the existing Newbury Street ramp at Massachusetts Avenue. Parcels north of Lansdowne Street would need to be included to make room for new turnpike toll plazas east of Brookline Avenue and a section of railroad tracks, from Beacon Street to the Bowker Overpass at Charlesgate, would have to be moved.

Traffic Impacts
Even though this alternative has the largest amount of air rights development and generates the highest number of vehicle trips overall, the net increase in local traffic volumes is less than that of the other alternatives. The design of the ramps reduces traffic impact to the lowest level of any of the alternatives; they are also cross-connected with the air rights road, removing some traffic from Kenmore Square.

Comparison of Alternatives
Each of the three alternatives would improve the traffic patterns in and through the Commonwealth Avenue rotary and would fill in many of the gaps in the turnpike deck with either institutional and/or commercial development. Each would also shield the adjacent Brookline neighborhood from through traffic and new Commonwealth Avenue development. However, the alternatives also offer some clear choices: whether to direct future university expansion above the turnpike (Alternatives 1 and 3) or to channel it further west along Commonwealth Avenue (Alternative 2); whether to build a single massive parking structure (Alternative 2) or a set of decentralized garages; and whether to set off Fenway Park with pedestrian plazas. If the main objective is to knit together two sides of the turnpike, then Alternatives 2 or 3 are more suitable. If the primary goal is to create a positive pedestrian environment around Fenway Park, then Alternative 1, the option that diverts Brookline Avenue and surrounds Fenway Park with a new entrance, is more attractive.





DATA

PARCEL	USE	DU	SITE AREA	FLR AREA	HEIGHT	STORY	FAR	PARKING
1	MU/P	---	189,579	1,134,852	187	16	5.98	750
2	---	---	44,666	---	---	---	---	---
3	MU/P	---	304,400	1,610,100	195	15	4.8-3.7	400
4	P	---	82,471	433,200	55	6	5.25	1,098
5	I	---	161,600	750,300	195	15	4.64	---
6	I	---	132,090	544,300	145	11	4.12	---
7	MU/P	---	411,404	2,276,350	135	10	4.60	1,088
8	P	---	357,215	752,000	55	6	3.44	2,696
9	---	---	63,313	---	---	---	---	---

DEVELOPMENT ALTERNATIVES

BU BRIDGE/KENMORE

ALTERNATIVE 3

Parcels 1-9

Direct access east and westbound on- and off-ramps, with air rights connection, located east of Brookline Avenue.

LEGEND

BUILDINGS

- R Residential
- MU Mixed Use
- I Institutional
- P Parking

LANDSCAPE

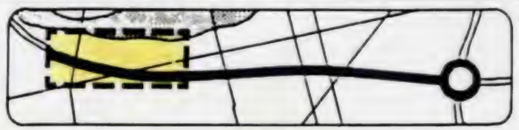
- Open Space
- Landscape Edge
- Recreation Feature
- Landscape Feature

TRANSPORTATION

- Existing Ramp
- Proposed Ramp
- Transit Stop
- CR Commuter Rail Stop
- CT Circumferential Transit (Future)
- RR Railroad Station
- TT Trackless Trolley
- Traffic Direction

Fig. 4.3

0 125 250 500



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DEVELOPMENT CONCEPTS

BROOKLINE CENTER

Critical to the development concept illustrated in the drawing is the mitigation of traffic impacts, including improved street alignments, a circumferential rail station, improved traffic signalization, air rights parking and well defined pedestrian precincts.

The turnpike alignment, which runs from the upper left-hand corner of the drawing to the lower right-hand corner, can be traced by the diagonal line of air rights development represented by a performing arts center, a park and a major mixed-use development.

Brookline Center, a major mixed-use development, would include university facilities, hotel, offices, retail, and below grade parking and a Green Line transfer station for the projected Circumferential Transit Route. The building would step up from existing low-rise residential development south of the air rights parcel to high-rise levels along Commonwealth Avenue to the north. A pedestrian mall would align with Carlton Street to link the residential area to the campus. The Cottage Farm neighborhood in the lower left would be buffered from through-traffic impacts and commercial uses by key street closures and a new community park.

In the sketch, a performing arts center in the upper corner takes advantage of grade changes and river views, and the office tower is topped with broadcast studios to create a powerful beacon on the river. Buildings are held back from the intersection in response to rising turnpike grades; air rights parking is located to minimize traffic congestion, and the end wall is modulated to reduce the bulk it presents to eastbound motorists.

Fig. 4.4

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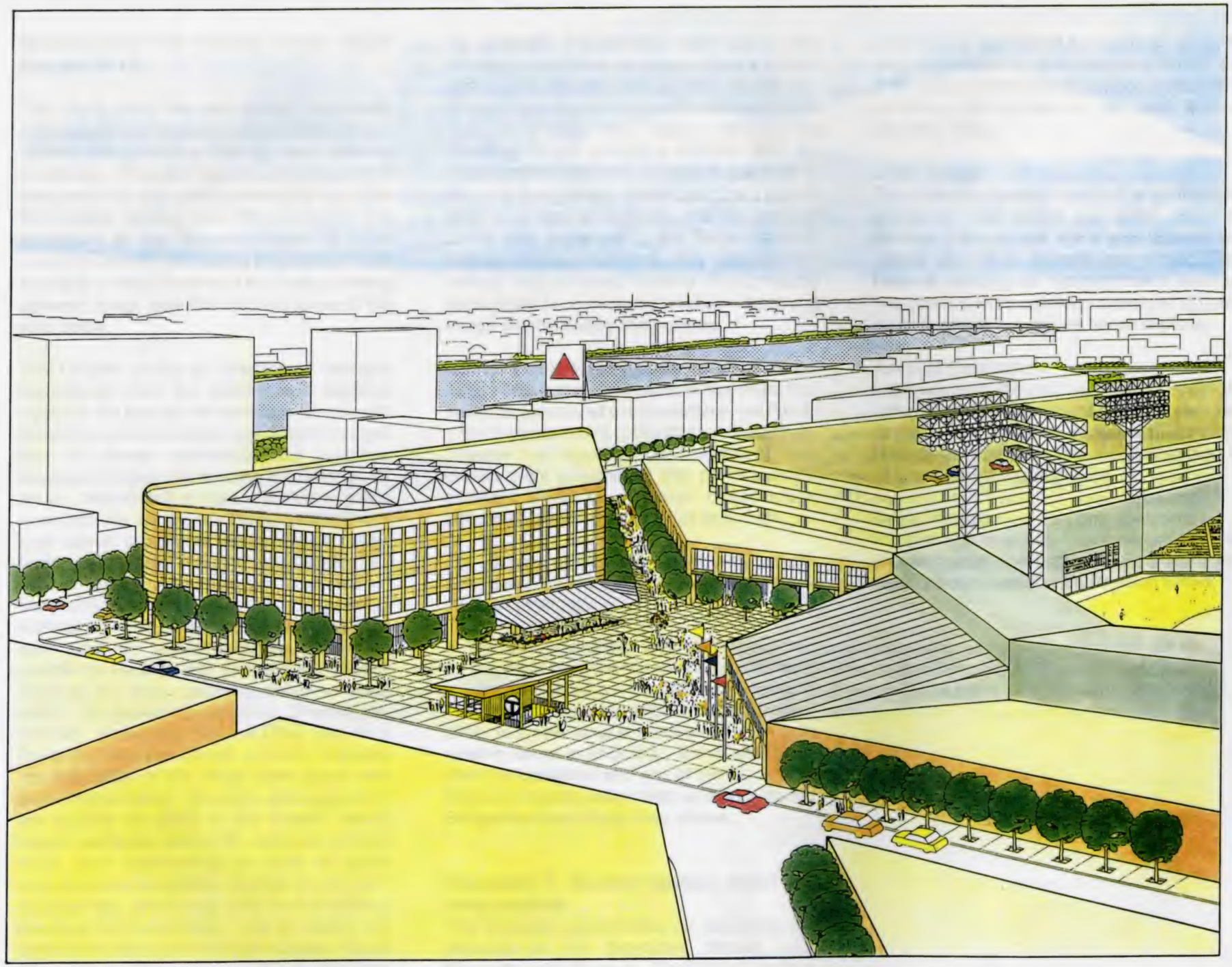

DEVELOPMENT CONCEPTS

KENMORE PLAZA

Central to the concept would be the development of an intermodal hub comprising a bus and rapid rail station, an upgraded commuter rail station and a parking facility with direct access to and from the MassPike and serving surrounding medical, cultural and educational facilities by means of a shuttle bus service.

The transportation modes would be connected to each other and to adjacent facilities -- retail shopping, office, hotel, Fenway Park, night clubs -- by means of an attractive pedestrian mall. To facilitate development of the pedestrian mall, Brookline Avenue has been diverted at its intersection with Yawkey Way.

The sketch shows a new plaza adjacent to Fenway Park, with Kenmore Square marked by the triangular Citgo billboard in the background. New air rights development occupies a broad horizontal band through the middle of the sketch. It contains mixed office and research uses in the left foreground structure; incorporates a major addition, beneath a skylighted atrium, to the existing triangular hotel and includes the central plaza and a relocated commuter rail station. The development terminates with a major parking structure above an office and retail arcade.

Fenway Park would be revealed and celebrated as one of the few surviving streetcar ball parks in this country, and its dedicated and long suffering fans would finally be offered a true urban welcome. The hotel, office, and entertainment uses could assure a year round public presence for the plaza, and the whole assembly could act as a powerful stimulus for the regeneration of the Kenmore area.

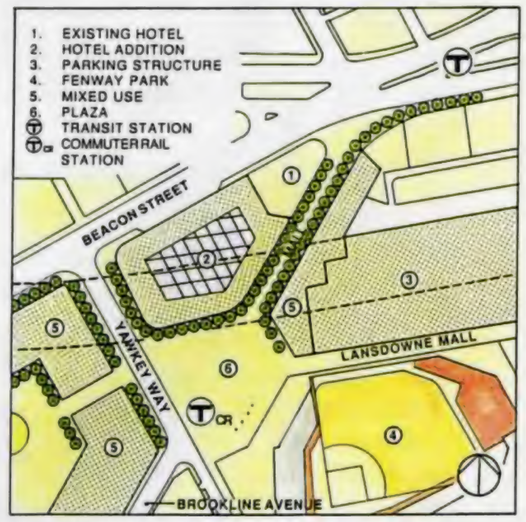

Fig. 4.5

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MASSACHUSETTS AVENUE STUDY AREA
(Parcels 10-15)

This study area has two distinct segments, Charlesgate and Massachusetts Avenue, whose special characteristics call for very different treatments. Therefore, while no development is proposed for the environmentally-sensitive Charlesgate section, new infill development is proposed at the Massachusetts Avenue overpass, both to restore the fragmented Back Bay grid at street level and to create a strong gateway image from the inbound lanes of the road below.

The turnpike profile at Charlesgate changes dramatically from the below-grade roadway typical of the turnpike elsewhere in Boston and Brookline, and the turnpike corridor itself changes from the dense commercial and industrial development typically defining the other study areas. This stretch of road was built at grade level because the Muddy River, MBTA/Green Line tunnel crossings, and railroad tracks combined to make turnpike depression here difficult. As a result, unlike the "boat-section" construction which surrounds the passing motorist along most of the road with walls on each side, the corridor expands outward to include the Fens on one side and the Charles River on the other, providing welcome visual relief. The Bowker Overpass at Charlesgate, however, connecting Storrow Drive with Park Drive and Boylston Street, currently intrudes into the center of this major open space and pedestrian crossing. Similarly, development of the turnpike air rights at this location would require platforms above the adjacent ground level, thus dominating an area of great environmental sensitivity; access to any such development would only add to the existing massive infrastructure. As a result, no development is proposed for Charlesgate - Parcel 10 and most of Parcel 11 - and the study area's development opportunities include only the compact area surrounding the intersection of Boylston Street and Massachusetts Avenue.

By contrast, the turnpike approach to the Massachusetts Avenue bridge offers a unique setting for a powerful new gateway into the city. It could also flag a high-profile office location and, with a major retail anchor, reinforce the Newbury Street shopping district. With no development above the turnpike to the west of this site, the gateway image could be a lasting one for eastbound motorists, and the sense of arrival now projected by the Tower Records building would not be lost. Any development west of Massachusetts Avenue should include memorable design features to build on the strong image established by this building.

Intensive development is proposed for Parcel 12 to offset some of the construction costs that would be associated with development of Parcel 13 on the eastern side of Massachusetts Avenue. Despite the construction constraints, the development potential of this prime location appears likely to outweigh construction difficulties, and interest in it has been high.

The closure of Cambria Street, between St. Cecilia and Boylston Streets, would allow Parcel 15 to be enlarged.

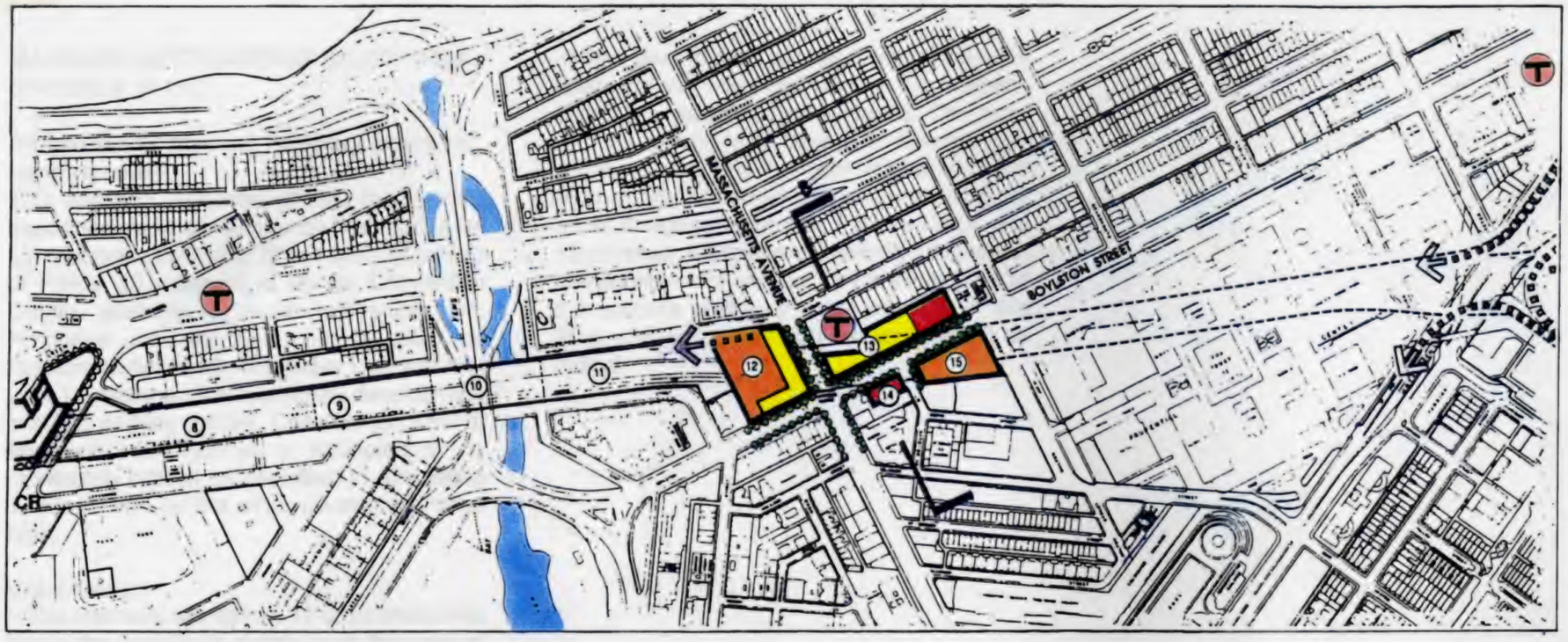
In the two urban-design alternatives explored for this study area, the Newbury Street on-ramp is retained in Alternative 1; but in Alternative 2, the ramp is closed and westbound traffic diverted either to a new ramp at Kenmore Square or to existing ramps in Back Bay. Either alternative could be combined with any of the BU Bridge/ Kenmore Square alternatives outlined in the BU Bridge/Kenmore Study Area, above.

Alternative 1: Existing Newbury Street on-ramp retained.
This scenario concentrates on improving the intersection of Boylston Street and Massachusetts Avenue. Envisioning up to 1 million square feet of new development and 1750 parking spaces, it incorporates mixed-use and institutional development along the north edge of Boylston Street and adds an air rights parking garage west of Massachusetts Avenue. It would also allow existing facilities to expand by combining the parcels on the south side of Boylston Street.

Urban Design
This scenario visually unites the institutional structures which define the area: the ICA, Berklee College, and the Hynes Convention Center, as well as the new face of the Tower Records building on Massachusetts Avenue. The goal is to fill the existing voids in the air rights cover to create a cohesive sense of place.

Turnpike Connections
In this scenario, the existing Newbury Street on-ramp remains intact, although it is not an essential feature. The ramp could have limited access from the adjacent air rights parking garage to reduce local street congestion.

Traffic Impacts
Ramp access could be limited to parking patrons, minimizing new traffic impacts. Parking access would also be available on Boylston Street.



DEVELOPMENT ALTERNATIVES

MASSACHUSETTS AVENUE ALTERNATIVE 1

Parcels 11-15

Existing Newbury Street on-ramp retained.

LEGEND

BUILDINGS

- R Residential
- MU Mixed Use
- I Institutional
- P Parking

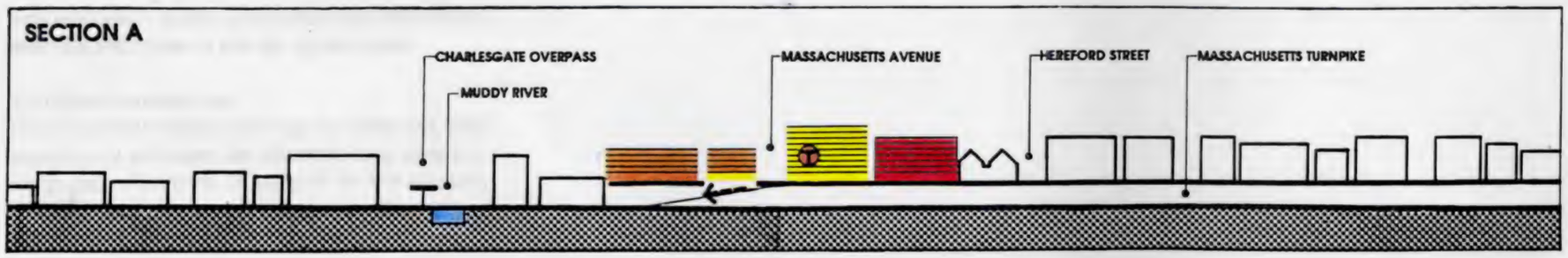
LANDSCAPE

- Open Space
- Landscape Edge
- Recreation Feature
- Landscape Feature

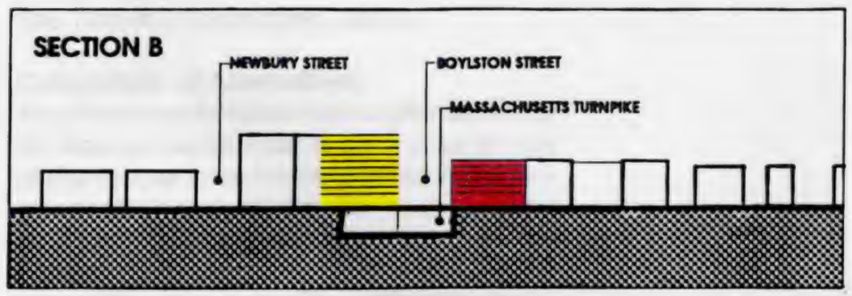
TRANSPORTATION

- Existing Ramp
- Proposed Ramp
- Transit Stop
- CR Commuter Rail Stop
- CT Circumferential Transit (Future)
- RR Railroad Station
- TT Trackless Trolley
- Traffic Direction

SECTION A



SECTION B



DATA

PARCEL	USE	DU	SITE AREA	FLR AREA	HEIGHT	STORY	FAR	PARKING
11	—	—	28,850	—	—	—	—	—
12	P	—	78,636	452,157	55	6	5.75	1,150
13	MU	—	54,105	448,945	120	9	8.29	—
14	I	—	9,180	18,360	35	2	2.00	—
15	P	—	35,859	215,154	55	6	6.00	600

Fig. 4.6

0 125 250 500

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MASSACHUSETTS AVENUE STUDY AREA (PARCELS 10-15)

Alternative 2: Existing Newbury Street on-ramp removed.
This scenario proposes offices, major retail space, and parking in a common base above the turnpike portal on Parcel 12 and institutional use of Parcel 15 adjacent to Hynes Convention Center, possibly for auditorium expansion. Proposed uses for the remaining sites on Boylston Street match Alternative 1, for a total of up to 1.6 million square feet of new development and 775 parking spaces. Construction west of Massachusetts Avenue is expected to be moderately difficult; as described in Alternative 1, constraints on the other parcels are rated high.

Urban Design
In this scenario, two narrow 12-story shafts rise above the turnpike to clearly mark the point of tunnel and city entry. As in Alternative 1, this scenario also visually unites the local institutions and fills the holes in the air rights cover.

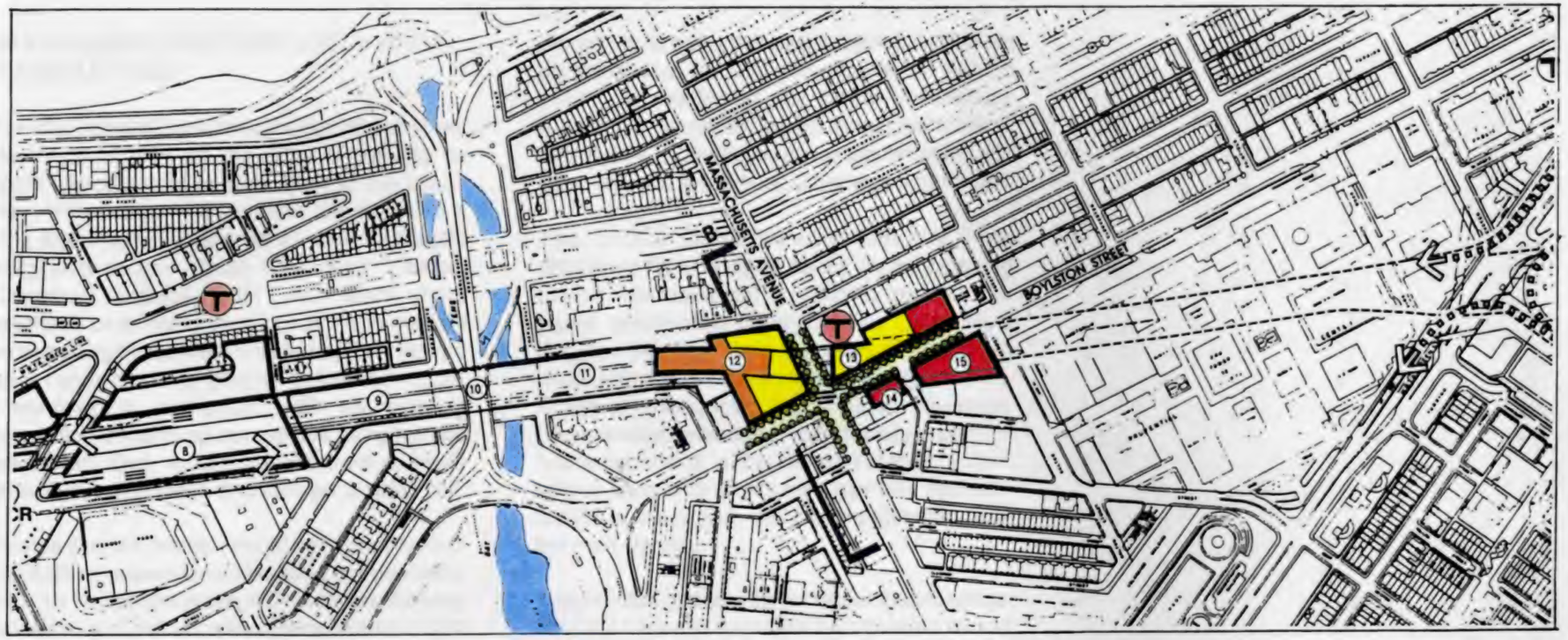
Turnpike Connections
The Newbury Street on-ramp is removed, and westbound vehicles are diverted to a new on-ramp near Kenmore Square or to the existing Huntington Avenue or Clarendon Street on-ramps.

Traffic Impacts
See Turnpike Connections, above.

Comparison of Alternatives
The differences between the two alternatives for the Massachusetts Avenue study area are not as dramatic as those in other scenarios, but they are nonetheless significant. The most important distinction is the decision whether or not the Newbury Street on-ramp remains open. The extent of development on Parcel 12, for example, and the program of uses, are shaped by the engineering constraints of the ramp and the road below. The alternatives test different mixes of land uses to demonstrate different ways the reintegration of the grid around the Boylston Street intersection can be achieved. On Parcel 12, the ground-level shops in Alternative 1 emphasize continuity with Massachusetts Avenue, while Alternative 2 represents different urban design opportunities. Parcels 13, 14, and 15 are small, representing relatively small-scale development options, but they are important to the success of any air rights planning in this area, and negotiation with the abutters will be critical.

MASSACHUSETTS AVENUE

ALTERNATIVE 2



Parcels 11-15

Existing Newbury Street on-ramp removed.

LEGEND

BUILDINGS

- R Residential
- MU Mixed Use
- I Institutional
- P Parking

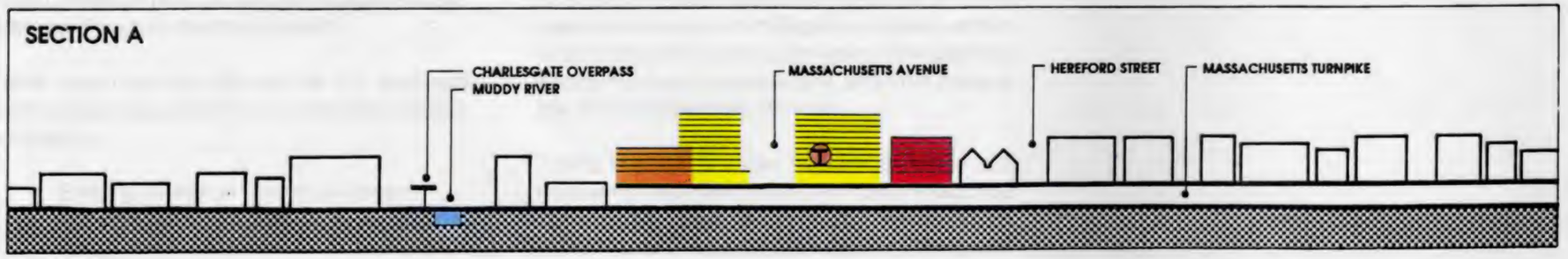
LANDSCAPE

- Open Space
- Landscape Edge
- Recreation Feature
- Landscape Feature

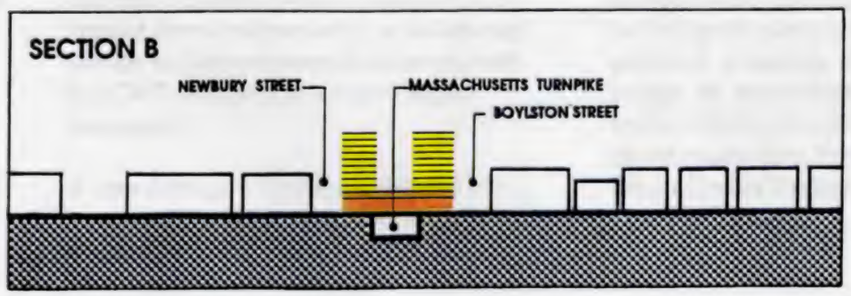
TRANSPORTATION

- Existing Ramp
- Proposed Ramp
- Transit Stop
- CR Commuter Rail Stop
- CT Circumferential Transit (Future)
- RR Railroad Station
- TT Trackless Trolley
- ← Traffic Direction

SECTION A



SECTION B

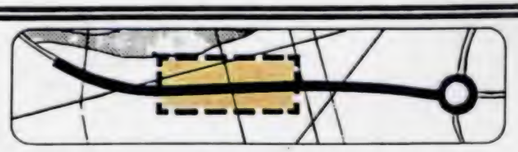


DATA

PARCEL	USE	DU	SITE AREA	FLR AREA	HEIGHT	STORY	FAR	PARKING
11	P	---	28,850	142,175	55	6	1.22	406
12	MU/P	---	78,836	758,000	157	12	9.64	370
13	MU	---	54,105	448,945	120	9	8.29	—
14	I	---	9,180	18,360	35	2	2.00	—
15	I	---	35,859	286,872	110	8	8.00	—

Fig. 4.7

0 125 250 500



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BAY VILLAGE/CHINATOWN STUDY AREA (PARCELS 16-23)

The Bay Village/Chinatown district extends from Back Bay Station (at the edge of existing air rights development in Back Bay) to the South Bay interchange. Within this two-thirds of a mile, the turnpike crosses portions of four historic neighborhoods: Back Bay, Bay Village, Chinatown, and the South End. Much of the emphasis on air rights development here centers on removing the barriers created by the turnpike and reconnecting these neighborhoods. Chinatown in particular, with its growing population expanding across the turnpike into the South End, would benefit from a more attractive, convenient, and safe pedestrian link.

This part of the corridor could serve to channel institutional expansion and related activities way from the residential areas in Chinatown. Nearby industrial and institutional presence which might absorb new space in this corridor includes the Tufts University medical and dental schools and the New England Medical Center.

Three urban design alternatives are explored for this study area, one for each possible turnpike connection:

1. Existing Arlington Street on-ramp retained, with a CA/T off-ramp to Marginal Road.

2. Arlington Street on-ramp removed and Herald Street expanded to a boulevard similar to Commonwealth Avenue, with the CA/T off-ramp to a new Herald Boulevard.

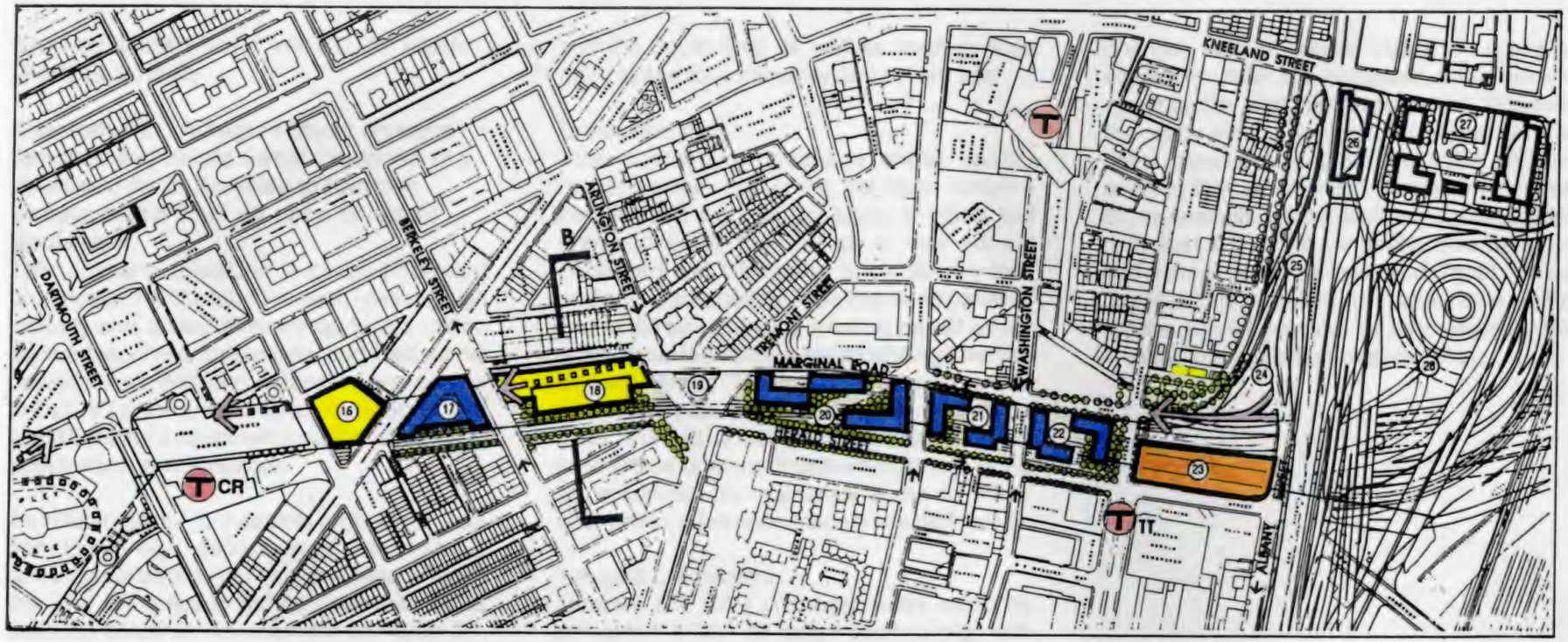
3. A new Arlington Street eastbound off-ramp paired with a new Berkeley Street westbound off-ramp, as well as the CA/T off-ramp to Marginal Road.

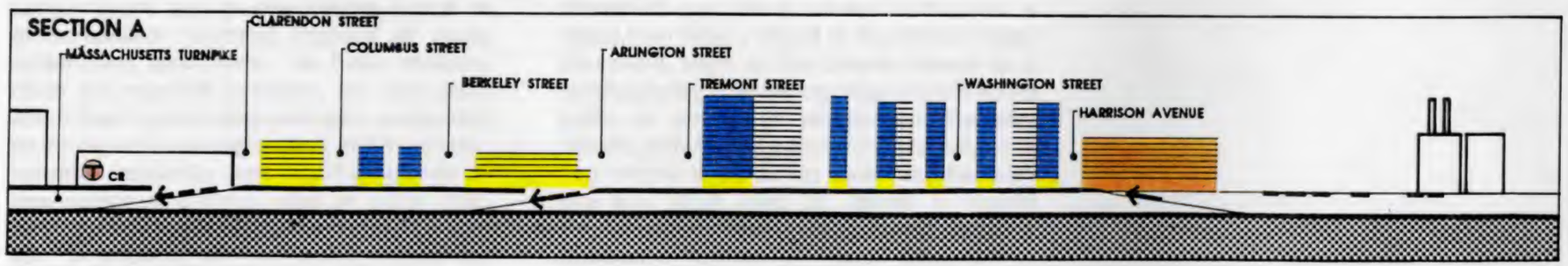
Each development scenario proposes a mix of residential, office, institutional, and parking uses along with street-level retail activities in different combinations, so that the effects of various mixes can be tested and better understood. Alternative 1 stresses new housing opportunities, Alternative 2, boulevard access to the area, and Alternative 3, institutional space and parking.

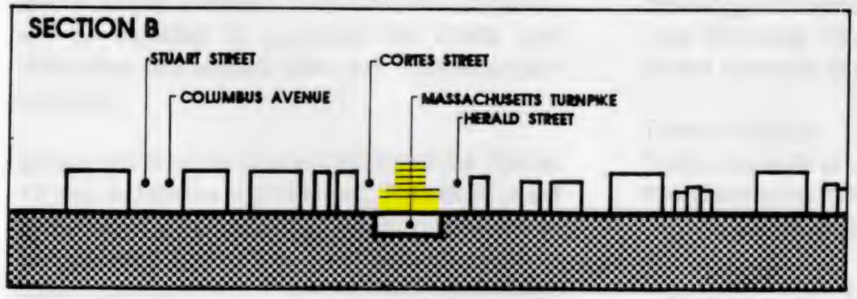
The BRA's Chinatown Community Plan discusses "land bridges" as a turnpike crossing device, but does not specifically propose air rights residential development. The New England Medical Center's 1990 Master Plan does not propose expansion on air rights sites. However, the current lull in local real-estate pressure also provides an opportunity to plan for future expansion in this key part of the corridor, whose links to Boston's new highway system - and thus, the region - will be strengthened over the next decade.

A significant opportunity for open space linkage also lies here and has been incorporated into all three scenarios: the Southwest Corridor Park could be extended eastward in a series of varied pedestrian spaces from Back Bay Station, where it currently ends, to the open space now planned above the new Central Artery, and from there to the city's Harborpark system.

Traffic impacts of street network changes and new air rights development have been evaluated by Vollmer Associates in the traffic study component of the air rights study, with the impacts of Alternative 2 examined in detail. Another transportation project relevant to this study area and of great community concern is the MBTA's planned widening of the Washington Street bridge to accommodate transit and two-way traffic, offering southbound traffic to Roxbury a direct route from Kneeland Street through the South End to Dudley Square.







DATA

PARCEL	USE	DU	SITE AREA	FLR AREA	HEIGHT	STORY	FAR	PARKING
16	MU	—	47,408	306,508	95	7	6.44	—
17	R/P	84	99,794	199,100	65	6	2.00	131
18	MU/P	—	120,313	315,300	77	6	1.66	300
19	—	—	11,970	—	—	—	—	—
20	R	576	108,411	768,000	165	16	7.00	—
21	R	412	89,539	471,000	155	15	7.91	—
22	R	353	67,619	550,350	155	15	6.96	—
23	P	—	97,922	505,350	105	8	5.16	483

DEVELOPMENT ALTERNATIVES

BAY VILLAGE/CHINATOWN ALTERNATIVE 1

Parcels 16-23

Existing Arlington Street on-ramp retained.

CA/THT off-ramp to Marginal Road.

LEGEND

BUILDINGS
- R Residential
- MU Mixed Use
- I Institutional
- P Parking

LANDSCAPE
- Open Space
- Landscape Edge
- Recreation Feature
- Landscape Feature

TRANSPORTATION
- Existing Ramp
- Proposed Ramp
- Transit Stop
- CR Commuter Rail Stop
- CT Circumferential Transit (Future)
- RR Railroad Station
- TT Trackless Trolley
- ← Traffic Direction

Fig. 4.9

0 25 250 500

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Bryant Associates
R.D Kimball Associates

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BAY VILLAGE/CHINATOWN STUDY AREA
(PARCELS 16-23)

Alternative 2: Arlington Street on-ramp removed and Herald Street expanded to a boulevard from Berkeley to Harrison Streets, with a CA/T off-ramp to Herald Boulevard.

This scenario envisions a grand boulevard entrance to the city from the east, creating high visibility and accessibility for up to 2.5 million square feet of new commercial and institutional development. With the prospective new access to the CA/T system, a tree-lined Herald Boulevard could become a downtown location attractive to both tenants and investors.

As in Alternative 1, constraints on this area vary from low to high, depending on parcel shape and transportation uses. However, relocation of the CA/T off-ramps to Herald Boulevard would seriously constrain development on Parcel 23, and therefore no development is proposed there. Longer spans and greater heights typical of office/research functions improve air rights construction economics; for these reasons, office and research functions, the ones most able to bear high development costs, are located on the expensive air rights sites, and more cost-sensitive residential uses would be placed on less-expensive at-grade sites on either side; parking (1900 spaces) is concentrated on Parcel 16. In addition, the engineering issues for Parcel 20 are considerable, because of the MBTA tunnel crossing, and more investigation will be needed to evaluate the costs and difficulties associated with any development scenario.

School yard expansion is proposed for Parcel 19 next to Boston High School; Parcel 21, next to the Quincy School, could either be dedicated to additional mixed-use development or open space development, if funding were available . In this location, open space rather than buildings, could offer a major pedestrian turnpike crossing and a strong connection between Chinatown and the South End, as well as much-needed open space for community and school use.

Urban Design

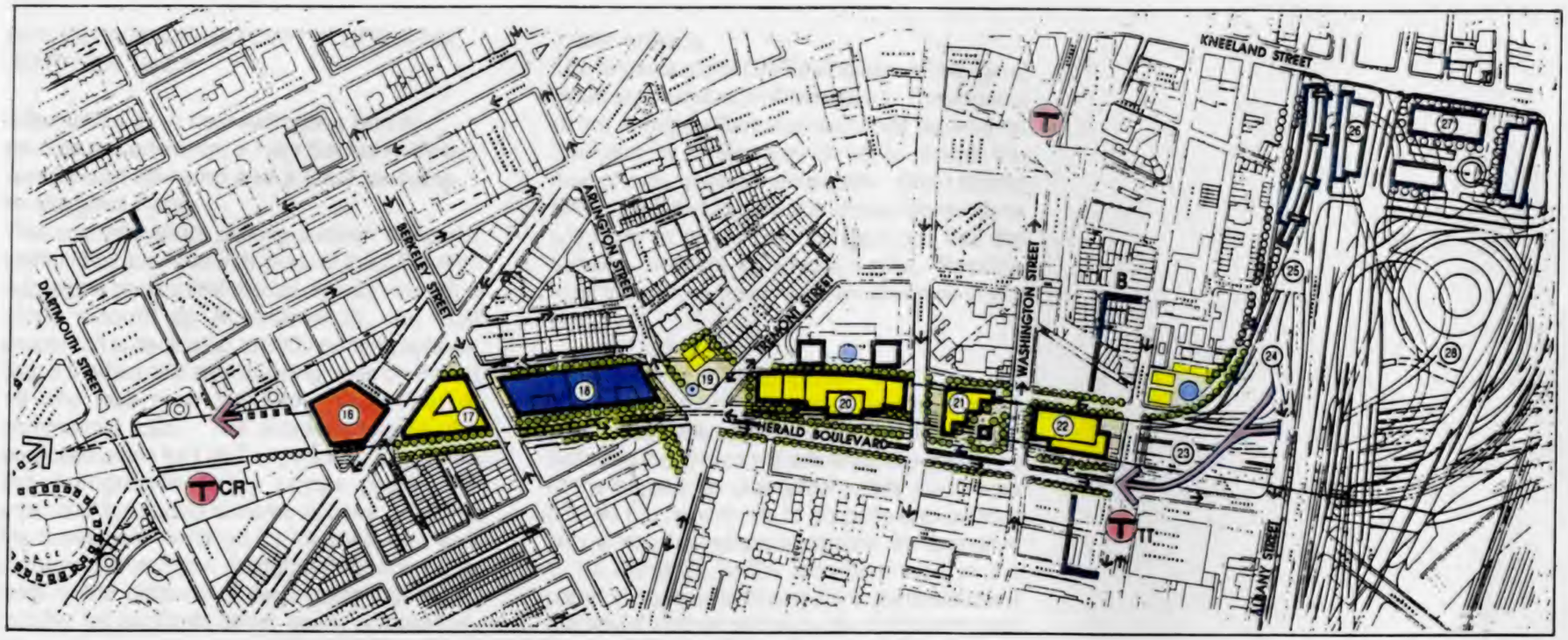
This scenario proposes a major spatial reorganization, converting the open turnpike corridor to a high-density spine of office and research uses, focused on a new Herald Boulevard and flanked on each side by low-scale residential areas. This tree-lined parkway is created by expanding existing Herald Street north above the railroad and extending it west to Berkeley Street. Chinatown is no longer bounded by the turnpike but becomes one of several districts united by their connection to a common central thoroughfare. Frequent crossings of the spine connect the residential areas on either side, while a major open space breaks its linearity.

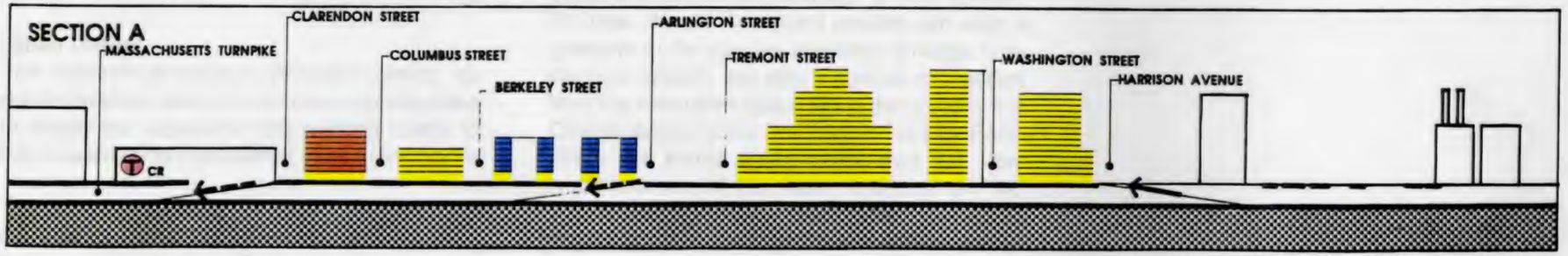
Turnpike Connections

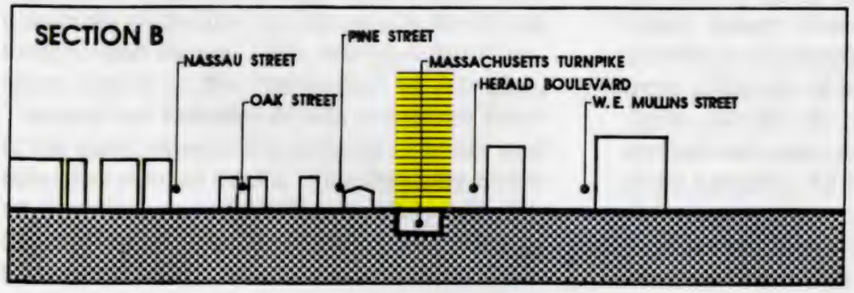
Turnpike and CA/T connections are made by swinging the CA/T off-ramps south to align with the end of a new Herald Boulevard. Central Artery/I-93 and tunnel access to the east is made from Albany Street at the end of Herald Boulevard, much as the Central Artery/I-93 is reached today. The concept requires redirecting traffic on portions of Arlington and Berkeley Streets, with Arlington becoming one way north from Herald to St. James Street and Berkeley one-way south from St. James to Herald Boulevard. This arrangement permits westbound vehicles on Herald Boulevard to make a right turn on Arlington Street without crossing eastbound traffic entering the Boulevard from Berkeley Street. The existing Arlington Street on-ramp is removed.

Traffic Impacts

Traffic impacts and street-network changes for this alternative make the most comprehensive changes from existing local patterns. It was analyzed in detail in the Vollmer study, which measures existing conditions, projects no-build volumes for the year 2010, and adds the new demands created by air rights development. According to the Vollmer study, these proposed changes have a greater impact on operating conditions than the increased traffic volume generated by air rights development. However, the study also recommends scaling down air rights development to reduce traffic impacts; omitting the development proposed for Parcel 21, for example, would nearly match the targeted reduction. Given the comprehensive nature of the ramp alternatives and local street modifications proposed in this alternative, further studies will be required to fully assess traffic impacts and mitigation requirements.







DATA

PARCEL	USE	DU	SITE AREA	FLR AREA	HEIGHT	STORY	FAR	PARKING
16	P	---	47,406	305,508	70	7	6.44	798
17	MU	---	99,794	229,125	65	5	3.00	—
18	R/P	180	120,313	352,000	75	7	2.92	137
19	---	---	11,970	—	—	—	—	—
20	MU/P	---	108,411	751,800	255	20	6.91	528
21	MU	---	69,539	418,000	245	19	6.40	—
22	MU/P	---	67,619	514,200	182	15	9.34	412
23	---	---	97,922	---	—	—	—	—

DEVELOPMENT ALTERNATIVES

BAY VILLAGE/CHINATOWN

ALTERNATIVE 2

Parcels 16-23

Arlington Street on-ramp removed.

Herald Street expanded to Herald Boulevard from Berkeley to Harrison Streets.

CA/THT off-ramp to Herald Boulevard.

LEGEND

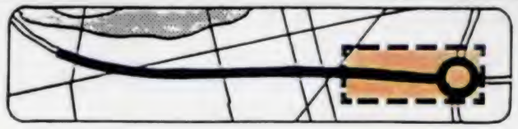
BUILDINGS
- R Residential
- MU Mixed Use
- I Institutional
- P Parking

LANDSCAPE
- Open Space
- Landscape Edge
- Recreation Feature
- Landscape Feature

TRANSPORTATION
- Existing Ramp
- Proposed Ramp
- Transit Stop
- CR Commuter Rail Stop
- CT Circumferential Transit (Future)
- RR Railroad Station
- TT Trackless Trolley
- Traffic Direction

Fig. 4.10

0 125 250 500



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MASSACHUSETTS TURNPIKE AUTHORITY

BAY VILLAGE/CHINATOWN STUDY AREA
(PARCELS 16-23)

Alternative 3: A new Arlington Street eastbound on-ramp, a new Berkeley Street westbound off-ramp and a CA/T on-ramp to Marginal Road.

This scenario offers parking support to nearby institutional and research uses: of the 2.5 million aggregate square feet of total development (the same amount as Alternative 2), the vast proportion is dedicated to 3300 parking spaces, with a modest 150 new housing units on Parcel 16 and less than 500,000 square feet of commercial use. The scheme follows the proposed plans for CA/T exits and incorporates the Arlington/Berkeley ramps previously proposed for added turnpike access. Beyond the constraints identified for Alternatives 1 and 2, the inclusion of the Arlington Street on-ramp adds to the difficulty of developing Parcel 20, making full air rights cover nearly impossible. Interest in this alternative is likely to come from surrounding institutions looking for new parking.

Urban Design

This scenario provides a strategic corridor air rights development as a reserve or service area to supply the expansion and parking needs of the research and institutional uses to the north.

Turnpike Connections

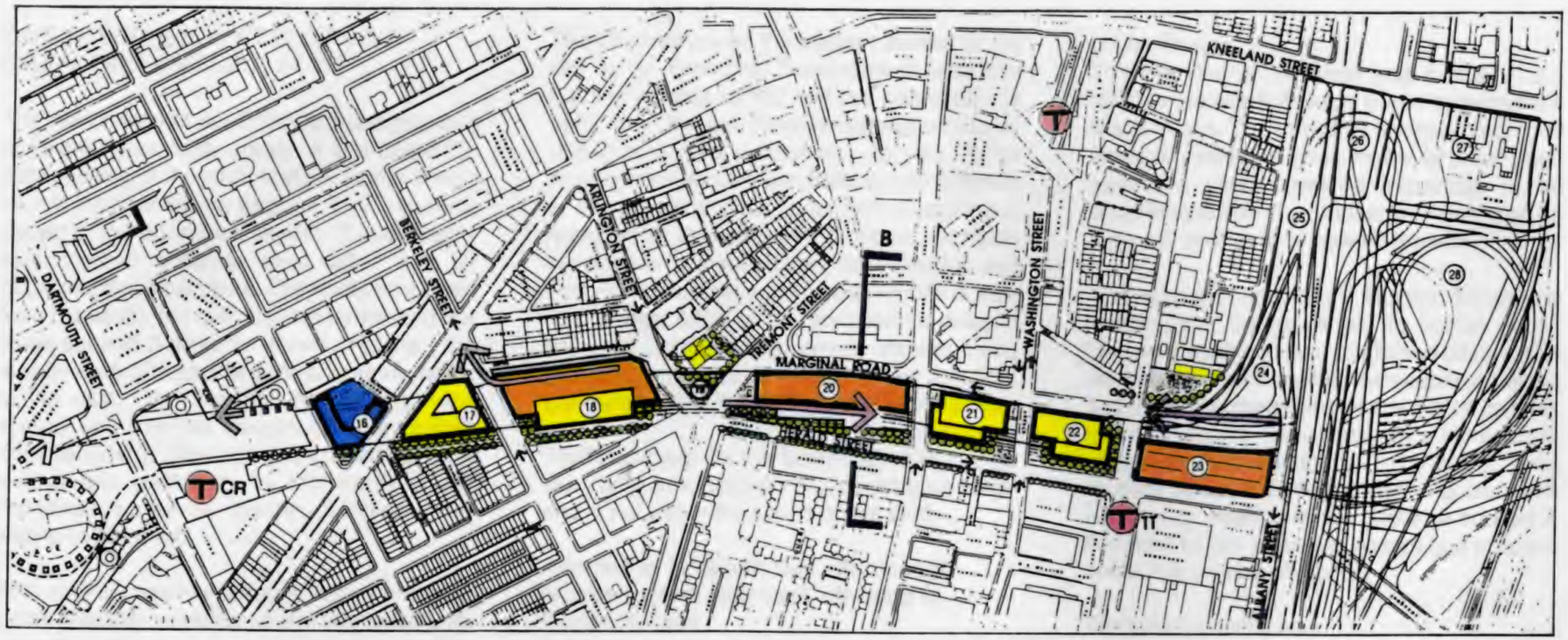
CA/T ramp connections are made at the end of a truncated Marginal Road as described in Alternative 1, but the Arlington/Berkeley ramps previously studied by the Turnpike Authority are incorporated as well. The Arlington Street on-ramp begins at the intersection of Arlington, Tremont, and Berkeley streets and ramps down to the east between the turnpike roadway and relocated railroad tracks. The Berkeley Street off-ramp is a reversal of the existing Arlington Street on-ramp, possibly with toll plazas. Design and operation of these ramps are discussed in detail in the Access Alternatives section in Chapter 3, and their local impacts are described in the Traffic Impacts section.

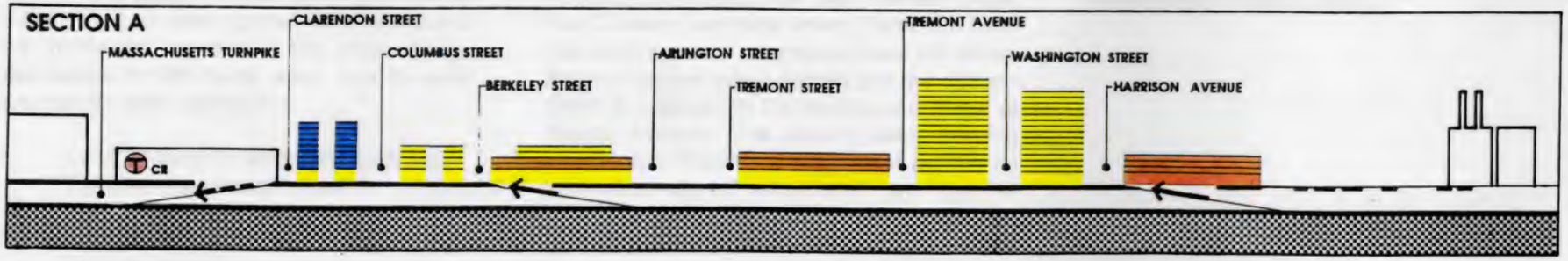
Traffic Impacts

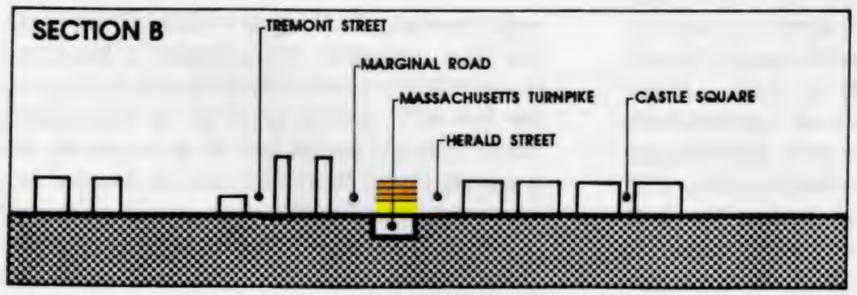
The impacts of the CA/T exit ramps on Marginal Road are described in Alternative 1. The impacts of the Arlington/Berkeley ramp pair depend on the capacity of Berkeley Street to absorb the flow of cars exiting the turnpike. Short blocks with limited stacking space and busy intersections are likely to produce traffic back-ups into the turnpike mainline for almost a mile. Possible local mitigations have not been analyzed in this study.

Comparison of Alternatives

Because the transportation improvements proposed for this study area are so different, and because the choice will influence the geometry of the parcels so dramatically, this study area offered the opportunity to propose and explore very different development options. In Alternative 1, for instance, unlike anywhere else in the corridor, housing is proposed, in part because it is a major concern raised by the community and because in other areas there were greater questions of financial feasibility. In Alternative 2, the new Herald Boulevard creates not only a gateway to the city (as motorists emerge from the new tunnel), but also a natural connection from the new open space along the spine of the Central Artery to the Southwest Corridor Park. While the traffic study notes that the new boulevard would put more pressure on the southern edge of the turnpike corridor and would require some re-routing of traffic, it addresses in a very positive way the concerns of the Chinatown community about Marginal Road, and from an urban design perspective represents a major contribution to the cityscape. Alternative 3 is the most utilitarian of the three, dedicating the air rights corridor to centralized parking for the institutional and industrial districts on both sides of the turnpike. All three scenarios, irrespective of the land uses selected, offer the opportunity to establish along Washington Street a gateway from the South End into Chinatown.







DEVELOPMENT ALTERNATIVES

BAY VILLAGE/CHINATOWN

ALTERNATIVE 3

Parcels 16-23

Arlington Street westbound on-ramp converted to Berkeley Street off-ramp and new eastbound Arlington Street on-ramp.

CA/THT off-ramp to Marginal Road.

DATA

PARCEL	USE	DU	SITE AREA	FLR AREA	HEIGHT	STORY	FAR	PARKING
16	R	149	47,406	242,844	95	9	5.12	—
17	MU	—	99,794	229,125	65	5	2.50	—
18	MU/P	—	120,313	324,000	77	5	2.70	925
19	—	—	11,970	—	—	—	—	—
20	P	—	108,411	368,600	55	5	3.40	1,056
21	MU	—	69,539	445,200	220	17	6.82	—
22	MU	—	67,619	476,400	207	16	7.04	—
23	P	—	97,922	465,000	55	5	4.74	1,328

LEGEND

BUILDINGS

- R Residential
- MU Mixed Use
- I Institutional
- P Parking

LANDSCAPE

- Open Space
- Landscape Edge
- Recreation Feature
- Landscape Feature

TRANSPORTATION

- Existing Ramp
- Proposed Ramp
- Transit Stop
- CR Commuter Rail Stop
- CT Circumferential Transit (Future)
- RR Railroad Station
- TT Trackless Trolley
- Traffic Direction

Fig. 4.11

0 125 250 500

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CA/T INTERCHANGE AT SOUTH BAY STUDY AREA (PARCELS 24-28)

The interchange at South Bay is a special place among the four study areas. It is a broad 25-acre opening in the city's texture, rather than a narrow corridor slicing through it. A dramatic sweep of the downtown skyline, it is ordinarily seen through motorists' eyes rather than by pedestrians or other users. Especially as viewed from the south, the surrounding forms create a stage set and a powerful sense of place: the massive bulk of the postal garage looms outward to the east; the financial district's high-rise skyline and low-rise foreground (the Boston Thermal Energy plant and Wang Building) form a dramatic backdrop to the north; and Chinatown's uneven skyline completes the setting to the west.

Both scenarios below respond to this powerful sense of space - as well as severe site constraints - by concentrating development on the accessible northern and eastern edges, leaving the central "infield" area as open space. Two versions of this theme are explored in the urban design alternatives for this study area, one for each possible turnpike connection:

1. CA/T off-ramp to Marginal Road, I-93/ Turnpike interchange rebuilt.

2. CA/T off-ramp to Herald Boulevard, I-93/ Turnpike interchange rebuilt.

Along the Chinatown edge, CA/T planners have proposed a combination retaining wall and acoustic barrier which will extend from Kneeland Street south to Tai Tung corner. The wall will rise an imposing 35 feet above Hudson Street and without careful treatment could create a forbidding enclosure for Chinatown; two urban design options are explored below for the wall and its surroundings, one scenario as purely public space and another with a residential layer.

The City has zoned the eastern portion of the site as an Economic Development Area and building heights to 400 feet are permitted. In 1989, the Boston Redevelopment Authority (BRA) solicited proposals for air rights development above South Station, just northeast of the site, and drew a number of ambitious responses. In the favored proposal, air rights development extended from South Station and Fort Point Channel across portions of the new interchange. Although the recession has delayed any new South Station private development, this area promises to remain a key location, particularly after the CA/T project is complete.

Traffic analysis for the South Bay interchange study area is included in the CA/T design process and is not within the scope of this study.

Alternative 1: South Bay Interchange reconstructed, with CA/T off-ramp to Marginal Road .

In this scenario, almost all development faces Kneeland Street along the site's northern edge. Two 30-story landmark towers frame the high-rise skyline view. The western tower sits above the southbound artery tunnel, and the eastern tower is adjacent to the northbound portal at Atlantic Avenue. The existing Wang building and Boston Thermal Energy plant remain (in somewhat altered form), and new low-rise structures are added to create a plaza and enclose a U-shaped drive. This form is punctured by openings which offer views outward from the plaza as well as inward from the elevated high-occupancy vehicle (HOV) ramp - en route to and from the South Station air rights garage - to the south. Part of the tower proposed for development on Parcel 26 will have to be supported by the tunnel box in which the new I-93 southbound will be located. An engineering study will have to be undertaken to determine the feasibility and cost of providing the structural support for a 30 -story development.

Urban Design

The twin towers, representing a total of 2.5 million square feet of space, would have dramatic visual impact. The "infield" as an open foreground would demonstrate a new model for urban open space, a place created expressly to be experienced from the road, and it would also be a natural setting for a new monument.

This scenario reduces the Hudson Street wall abutting the Central Artery to human scale. Ramps at each end lead to a raised observation platform which lowers the wall's apparent height and affords a closer view of artwork on its face, commemorating the community's immigration history and achievements. The plaza along Hudson Street would be paved and landscaped; community meeting rooms could be housed in the three to four thousand square feet of space under the viewing platform.

Turnpike Connections

See the Bay Village/Chinatown analysis, Alternatives 1 and 3, above.

DEVELOPMENT ALTERNATIVES

SOUTH BAY
ALTERNATIVE 1

Parcels 24-28

CA/THT off-ramp to Marginal Road.

South Bay Interchange reconstructed.

LEGEND

BUILDINGS

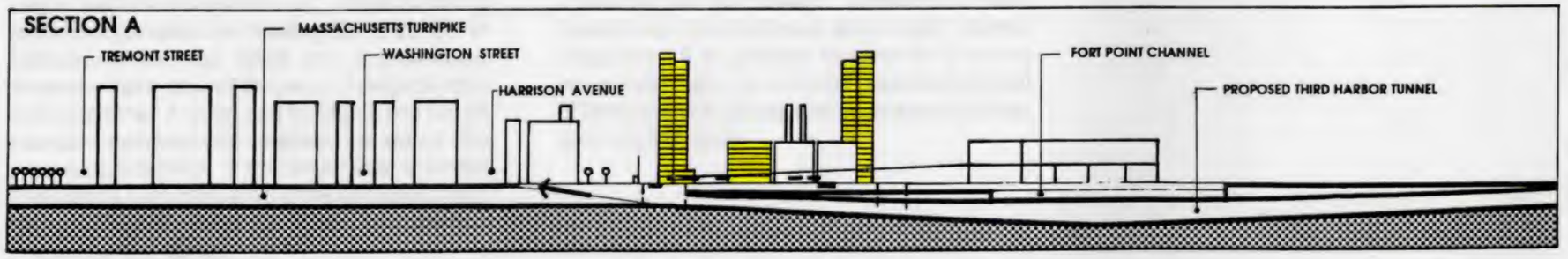
- R Residential
- MU Mixed Use
- I Institutional
- P Parking

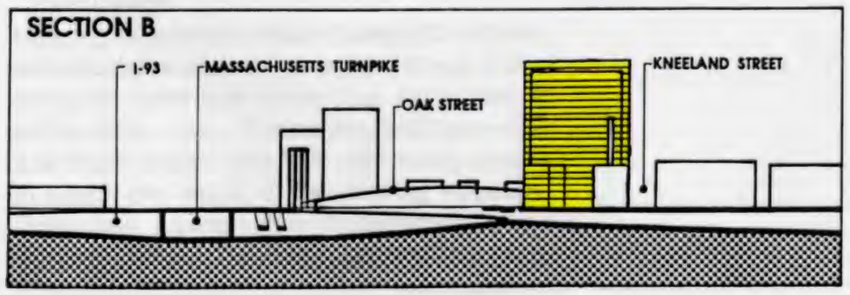
LANDSCAPE

- Open Space
- Landscape Edge
- Recreation Feature
- Landscape Feature

TRANSPORTATION

- Existing Ramp
- Proposed Ramp
- Transit Stop
- CR Commuter Rail Stop
- CT Circumferential Transit (Future)
- RR Railroad Station
- TT Trackless Trolley
- ← Traffic Direction





DATA

PARCEL	USE	DU	SITE AREA	FLR AREA	HEIGHT	STORY	FAR	PARKING
24	—	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—
26	MU	—	51,300	1,068,000	400	31	20.81	—
27	MU/P	—	140,400	1,506,800	400	31	10.73	1,030
28	—	—	—	—	—	—	—	—

Fig. 4.12

0 125 250 500

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CA/T INTERCHANGE AT SOUTH BAY STUDY AREA (PARCELS 24-28)

Alternative 2: South Bay Interchange reconstructed, with CA/T off-ramp to Herald Boulevard.
This scenario is similar to Alternative 1 but is more aggressive. It removes the Wang building and the Boston Thermal Energy plant to permit greater design flexibility in low-rise and below-grade parking (almost 1400 total spaces) as well as a larger area for the central plaza. It also proposes about 200 units of housing at the Hudson Street wall, anchoring that corner of the residential community and essentially replacing units lost when the Central Artery was first built in the 1950s. The whole envelope of new development contains about 200,000 more square feet than Alternative 1.

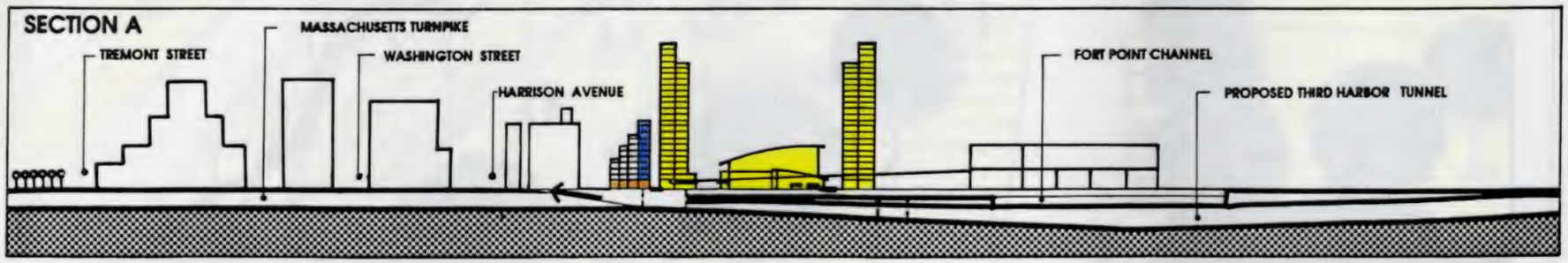
The Chinatown edge has a high constructability rating, but coordination with CA/T engineers is necessary to assure maximum benefits from the barrier wall for residential use. There is strong community support for housing development in Chinatown, but high costs and a depressed economy have slowed the pace of projects now in the pipeline. A clean and buildable site would increase development interest, as would the proposed extension of the Southwest Corridor Park (and a public/private partnership to assume responsibility for developing and maintaining this part of the park).

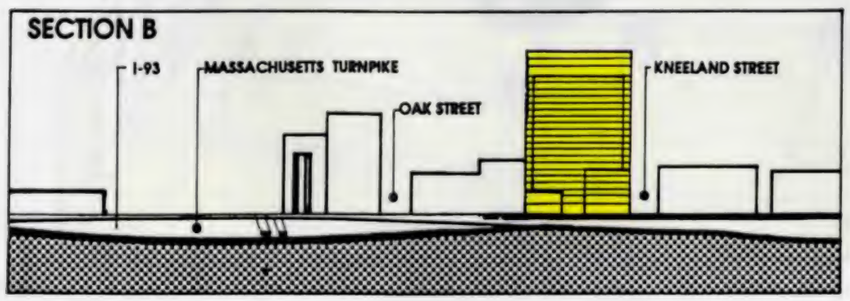
Urban Design
Housing is oriented inward toward Chinatown, with circulation and service spaces concentrated along the outer wall where they would help to buffer traffic noise. The curving wall generates a dramatic dragon-like form undulating upward to match the height of the existing Kneeland street-wall. Landscape development along Hudson Street contains both public and semiprivate zones to permit extension of Southwest Corridor Park to outdoor areas for residents.

Turnpike Connections
See the Bay Village/Chinatown study area analysis, Alternative 2.

Comparison of Alternatives
Although both scenarios establish a new gateway into downtown Boston, they test different levels of development and different relationships between the study area and residential Chinatown. Alternative 1 proposes relatively low density on Parcels 26 and 27, because it assumes that the Boston Thermal Energy plant remains (both scenarios assume that the Wang building will be demolished); it also establishes a softer edge between the highway and the Chinatown neighborhood. The second alternative reinforces the edge of Chinatown with housing development that turns its back to the highway and establishes a framework for more coherent (and more intense) development on Parcels 26 and 27.

Both scenarios also offer an exciting design alternative for the "infield:" instead of a more traditional landscaped area with dense vegetation, it is an ideal location for a strong visual landmark - a symbolic acknowledgment of Boston which can also serve as an orientation point for the driver.





DATA

PARCEL	USE	DU	SITE AREA	FLR AREA	HEIGHT	STORY	FAR	PARKING
24	—	—	—	—	—	—	—	—
25	R/P	130	54,000	170,600	110	11	5.86	65
26	MU	—	51,300	1,068,000	400	30	20.82	—
27	MU/P	—	203,500	1,506,800	400	30	7.40	1,311
28	—	—	—	—	—	—	—	—

DEVELOPMENT ALTERNATIVES

SOUTH BAY

ALTERNATIVE 2

Parcels 24-28

CA/THT off-ramp to Herald Boulevard.

South Bay Interchange reconstructed.

LEGEND

BUILDINGS

- R Residential
- MU Mixed Use
- I Institutional
- P Parking

LANDSCAPE

- Open Space
- Landscape Edge
- Recreation Feature
- Landscape Feature

TRANSPORTATION

- Existing Ramp
- Proposed Ramp
- Transit Stop
- CR Commuter Rail Stop
- CT Circumferential Transit (Future)
- RR Railroad Station
- TT Trackless Trolley
- ← Traffic Direction

Fig. 4.13

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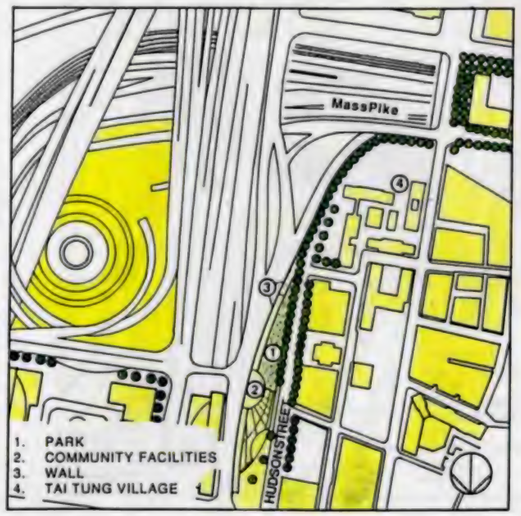
DEVELOPMENT CONCEPTS

HUDSON STREET PARK

A community park would be created on a new site gained by roadway consolidation in the reconstruction of South Bay Interchange. The park would front on Hudson Street to the right and would be separated from the interchange to the left by a horizontally and vertically curving sound barrier and retaining wall. While this wall would exclude noise and traffic rather than invading hordes, it could have a symbolic relationship to its Great Wall precedent. In this concept, however, the wall would create a backdrop for murals depicting the history of Asian immigration, settlement and achievement. Ramps and an elevated platform would aid close-up viewing of small-scale graphics and provide a location for services and community facilities beneath. Paved areas would include spaces for children's play, and a garden site would be available for community improvement.

In the sketch, the park is viewed between office buildings fronting on Kneeland Street; a new air rights structure is to the left and on the right, smaller existing buildings continue along Hudson Street and terminate at the Tai Tung Village towers adjacent to the turnpike in the background. The turnpike enters the South Bay Interchange from the right and continues across the interchange to the Third Harbor Tunnel portal on the left.



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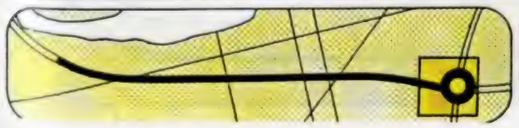

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DEVELOPMENT CONCEPTS

SOUTH BAY GATEWAY

MassPike owns much of the land in the South Bay interchange where the Central Artery / Third Harbor Tunnel project will add additional ramps and roadways connecting the tunnel, the artery, and the turnpike. Other planning studies and development proposals have suggested that the air rights of the entire interchange be developed.

The MassPike study takes an approach accepting that roadway systems will severely constrain development. Instead, the infield could be the locus of a dramatic landscape scheme or public monument with development located along the Chinatown and Kneeland Street edges of the site.

As shown in the illustration, a gateway to the city from the south would be created by the construction of two new office towers which would form a dramatic frame for a view of the Boston Skyline. To the left, an arc of stepped housing would provide a screen for Chinatown and the proposed South Station bus ramp is shown rising to the right to enter the new transportation center on air rights above the railroad tracks

The Wang Building and the Boston Thermal generation plant presently fronting Kneeland Street would be removed to present a clean and unencumbered site for new development. Pagoda Park, which is currently wedged between Boston Thermal and the Kneeland Street expressway exit, would be relocated to Hudson Street or a new air rights parcel adjacent to the Quincy School, away from this major traffic interchange.

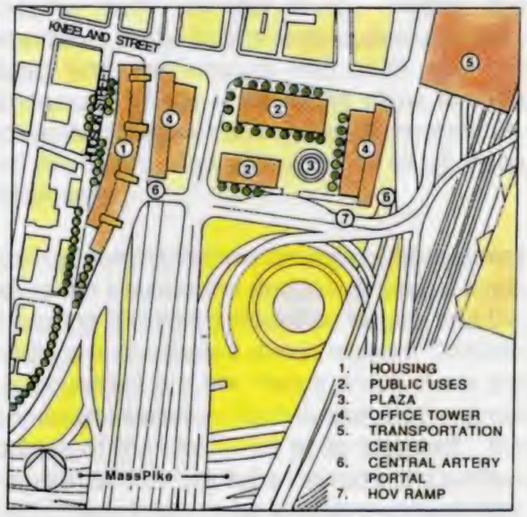
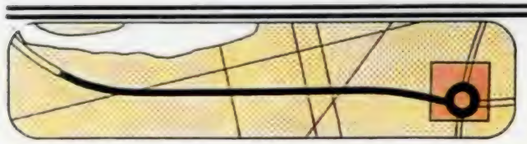


Fig. 4.15



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MASS PIKE

AIR RIGHTS STUDY
MASSACHUSETTS TURNPIKE AUTHORITY

5. SUMMARY AND FINDINGS

The concept of developing air rights in conjunction with transportation facilities is not a new one. As cities developed over time, air rights were used to achieve the benefits of adjacency to rail transport facilities and to reap the commercial value associated with the large concentrations of people moving in subways. When depressed highways were introduced into the urban fabric, planners sought to use the valuable air rights over them to capture some of these same values.

In order to investigate the opportunities to develop air rights over the turnpike in Boston from its narrowest to its broadest configuration, this study started by examining the components of the corridor to determine what it was about each of them that would affect the feasibility of air rights development. The first element studied was the traffic corridor itself. Within this dimension, traffic flow is an important concern, along with the entries and exits and the dimensions of the roadway to allow through movements, weaves and on and off movements, and the safety and efficiency of all of these movements.

Moving outward, the boat or walls of the roadway define the boundaries and the structural limits where the turnpike jurisdiction begins and the buildings and adjacent structures end. Tied into this boundary are the ramps which make the connections between the turnpike and the street network of the city. And at its broadest, the turnpike corridor has to be viewed in the context of its surroundings - those land uses and activities that occupy the space within a hundred feet or so from the highway and which establish the character and context of the areas where new

air rights projects might occur. Moving up, one encounters the walkways, bridges and buildings which already straddle the turnpike. From this vantage point the engineering elements of air rights development can be seen - the structural platform, the air vents, the exit/entry ramps.

This study looked at each component of the corridor in order to understand how many variables had to be incorporated into the analysis and to comprehend how they work to allow or constrain the options that might be recommended. It was apparent from the outset that air rights is feasible because several successful developments have been built along the Back Bay section of the turnpike. These projects demonstrate how air rights development has already accomplished some of the goals that have been identified in this study for future air rights projects. They have been successful in providing connections between neighborhoods that otherwise would be separated; have changed the visual impact of the turnpike corridor in the Back Bay, tied turnpike access and parking garage access; and met the structural requirements necessary to sustain the developments.

Yet reviewing these prior developments does not necessarily point the way for air rights projects elsewhere along the turnpike. Rather, we need to consider three important questions:

- What kind of development can be built along the turnpike?
- How much development should be accommodated?
- Where above the ribbon of highway should it be located?

This study explores these questions and lays out a framework for further investigation of the study area and parcel specific considerations.

What Kind of Development?

To answer What kind of development? this study looked at the urban context along the turnpike. This analysis showed that opportunities exist for using air rights development to meet both city-wide needs and local neighborhood concerns. In most of the study areas, a combination of commercial, institutional and residential uses currently exist in different proportions. It is these three land uses and the opportunity to use air rights to also solve many different urban parking problems, that dominate the options for future air rights projects. When combined with the need and opportunity for introducing major amenities to improve the physical environment along the corridor and to interface with the local street network, many development options emerged. These alternatives have been described earlier in this report.

To answer the first question What kind of development? the study identified a variety of ways to mix the institutional, commercial, residential and parking uses in varying proportions. When these different combinations are supplemented with the introduction of new ramps for access to and from the turnpike, the resulting development options respond to the objectives for air rights development established in this study. In particular, these alternatives in different ways re-knit the fabric of the city and its neighborhoods which are bisected by the corridor; establish options for institutional growth; protect residential neighborhoods from the intrusion of traffic associated with the development options; introduce landscape, park and urban design amenities to provide buffers between new and old or to accentuate and create a sense of place for the new; and accommodate existing parking needs and provide additional capacity for the parking associated with proposed new activities.

How Much Development?

Substantial development can be sustained along the air rights corridor. Because of the cost premium associated with developing on air rights, such projects need to be large enough to absorb this premium. The alternatives studied here were guided by what zoning allows in the areas immediately adjacent to the corridor. However, the study did not conclude that because a certain level of development is allowed that indeed that level should be built. Rather the work leaves open as questions for later studies and negotiations, just how much development is both desirable and acceptable - questions appropriately left to the city planning process. However, this study did document the scale of the development alternatives presented, and the urban design profiles associated with those levels of development.

It is useful before leaving the topic of How much development? to consider the impacts of development, especially traffic, that will be generated by these alternatives. As stated in several sections of the report, the impact of traffic increases on the local street network is an important consideration to be weighed against the benefits associated with different development options. Many changes in the transportation system that intersects with the turnpike corridor will occur by the time new air rights projects can be realized and many of them should serve to abate traffic impacts. In particular ,improvements to the circumferential transit service will serve populations who are presently not served. Direct express bus service along the turnpike and into the new developments may be instrumental in reducing the vehicles that might otherwise have to travel on local streets.

However, it needs to be stressed that effective traffic mitigation will be a key ingredient in defining feasible development. Ultimately, the desirable and acceptable development options will be those which have the mix of uses, scale of development and level of impact that can be sustained by those who are affected by them.

Where Should Development Occur?

This study examined how development could be distributed along the corridor. The best locations for new development are likely to be within the four study areas into which the corridor parcels have been aggregated. However, the ramps system is likely to be a major determinant of new development locations. This study has taken the first step in re-evaluating the ramp system as we have explored development options.

The access/development relationship is key to determining the scale and mix of development and to limiting the local traffic effects. The preliminary analysis for the BU/Kenmore Study Area , for example, shows that the opportunity to combine new turnpike connections with air rights development presents dramatic potential for improving the urban character of those neighborhoods.

Rather than prescribe development packages for individual parcels or aggregated study areas, this study presents scenarios for the four study areas where air rights development appears to show promise for fulfilling the turnpike objectives, and for meeting the goals and expectations of the City of Boston, the Town of Brookline and the neighbors who live alongside the turnpike corridor.

As stated at the beginning of this study, the findings detailed above are intended to support an ongoing planning process to address questions related to the nature, scale and location of air rights development that might be considered along the Boston Extension, east of the Boston University Bridge.

Locations that might become the focus of immediate attention, include the Chinatown/ South Bay interchange area, where ongoing collaboration with the CA/T project will be crucial if the viability of key elements of development options for this area are to be further explored; and the Fenway, to determine the extent to which the concepts developed for the area fit with the interests of the City, the community and the neighboring institutions.

APPENDIX

PARCEL ANALYSIS

The following pages offer a summary of Urban Design and Engineering Analyses of the parcels identified in *Parcelization*, Figure 1.1.

The Urban Design analyses provides data regarding parcel ownership, sizes and constructability. The context of the site is described and constraints on and opportunities for urban design are summarized.

The Engineering Evaluations describe the location and access of the sites, outline existing conditions and list potential utility service connections and facilities.

URBAN DESIGN

PARCEL 1

Study Area ..... BU Bridge / Kenmore
Location ..... Northwest corner of BU Bridge and Commonwealth Avenue
Access ..... Commonwealth Avenue, service road below BU Bridge
Constructability ..... B

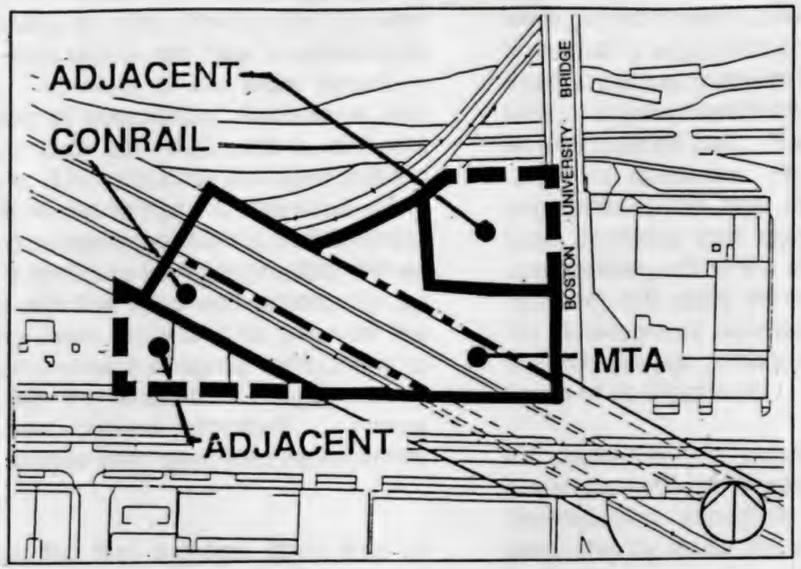
Size:
MTA ..... 111,539 sq. ft.
Conrail 16,695
Parcel Size 128,229
Adjacent Parcel 61,350
Total Area 189,579

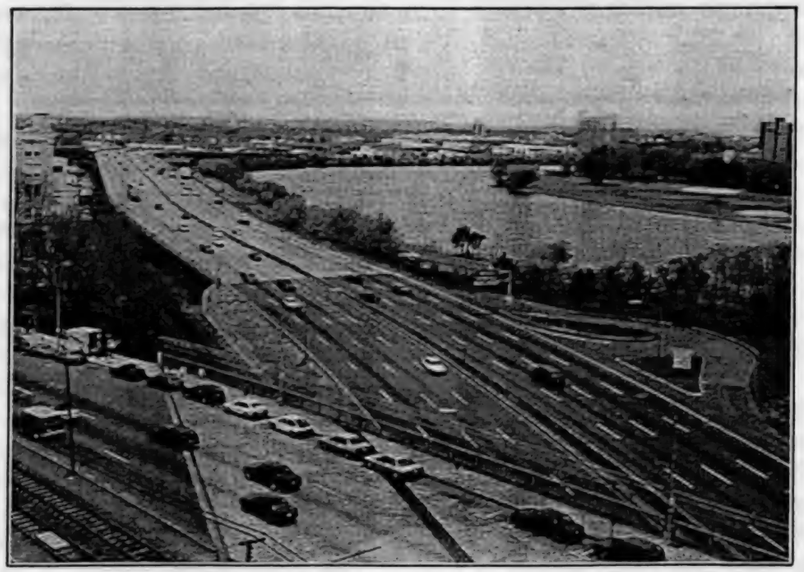
CONTEXT

Storrow Drive and the railroad tracks are located to the north. The BU Performing Arts Center is to the west. The Fuller Building is at corner of Commonwealth Avenue and Essex Street, and a two-story converted academic building is on the northeast corner of the intersection. This parcel has a complex sectional geometry; Commonwealth Avenue crosses above the turnpike and the railroad passes underneath the turnpike. Lack of development on this site contributes to the area's formlessness.

CONSTRAINTS / OPPORTUNITIES

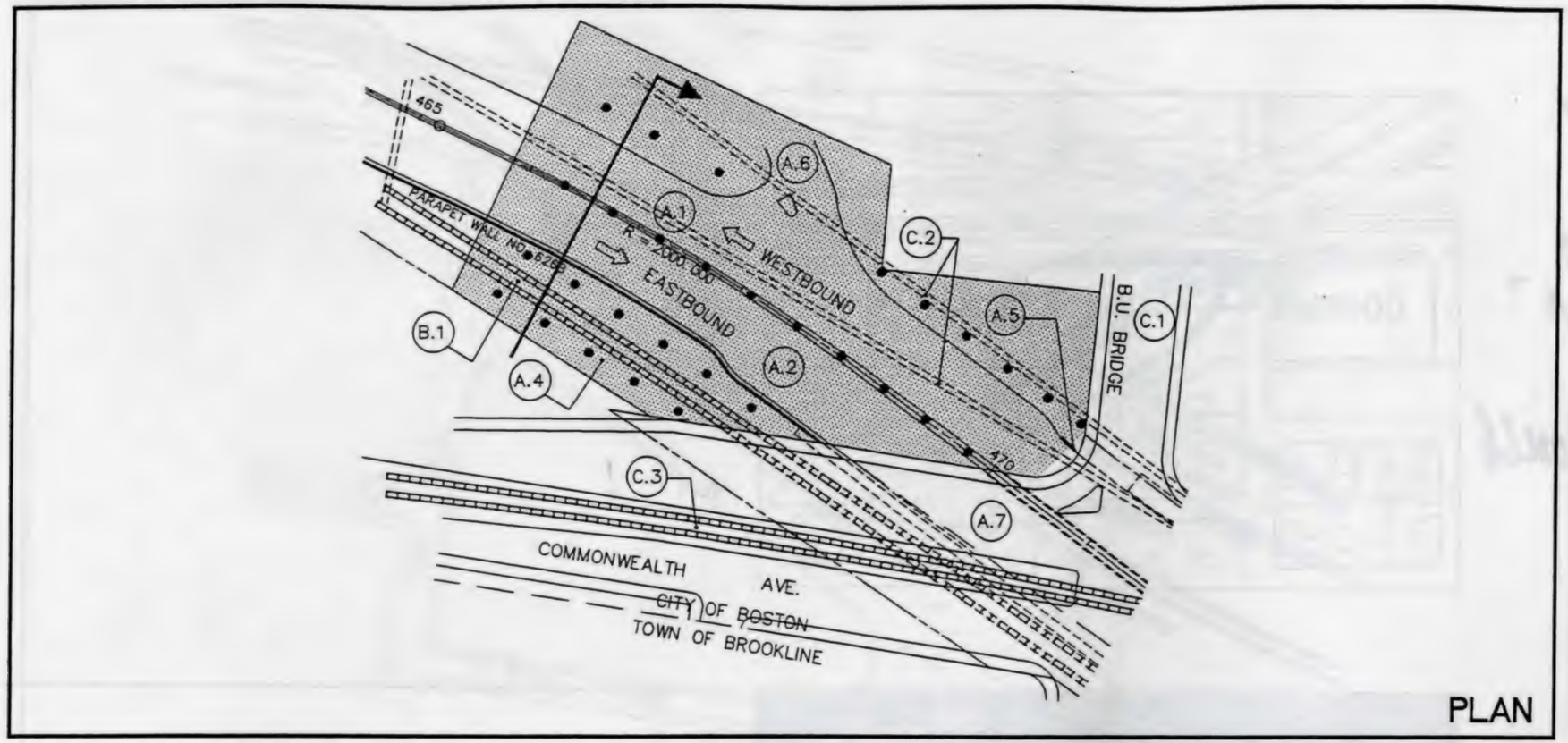
This parcel is a potential gateway for eastbound motorists entering the city. It also commands dramatic views of the Charles River and Cambridge. The parcel is a good location for an exciting landmark structure.



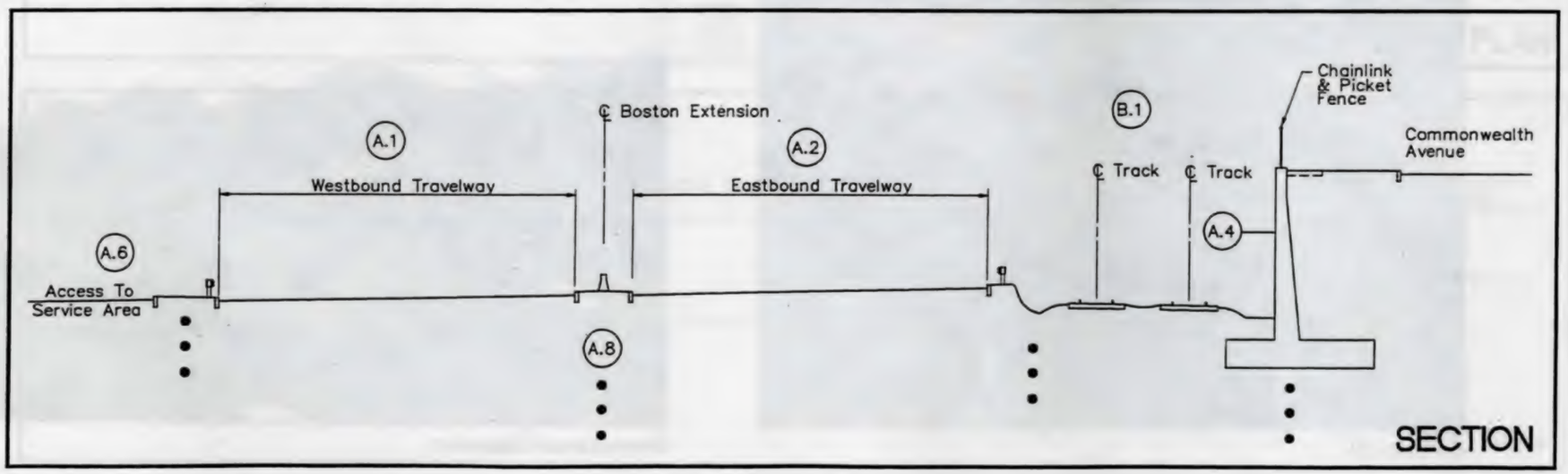


West from Commonwealth Avenue

East toward BU Bridge



PLAN



SECTION

ENGINEERING EVALUATION
PARCEL 1

I. Physical Properties

A. Location—Commonwealth Ave. west of the B.U. Bridge in Boston

B. Access
1. North—Abutting Property
2. South—Commonwealth Bridge
3. East—Boston University
4. West—None

II. Existing Facilities (See Plan and Section for location)

A. MTA
1. Mainline Westbound 4—12' travel lanes
2. Mainline Eastbound—4—12' travel lanes
3. Profile Grade change
4. South retaining wall (20'+)
5. North retaining wall (0'—25'+)
6. Westbound service area
7. Commonwealth Avenue Bridge

B. Conrail
1. Inbound & Outbound track

C. Others
1. B.U. Bridge
2. Sewer
3. Green Line Tracks

III. Potential Utility Service Connections

A. Electric—Commonwealth Ave.
B. Gas—Commonwealth Ave.
C. Steam—None
D. Telephone—Commonwealth Ave.
E. Water—Commonwealth Ave.
F. Sanitary Sewer—Commonwealth Ave.
G. Storm Drain—Commonwealth

IV. Future Facilities with Potential Impact on Development

None identified

LEGEND

A.1 — Existing Facility

Section

Layout/Property Line

• • • Potential Support Location

URBAN DESIGN

PARCEL 2

Study Area ..... BU Bridge / Kenmore
Location ..... Between Essex Street and University Road
Access ..... Commonwealth Avenue, Essex St., Mountfort St.
Constructability C

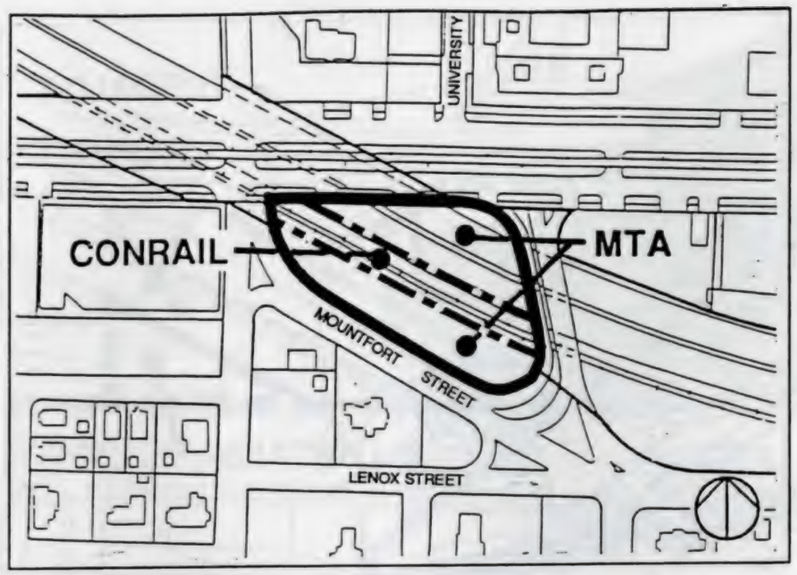
Size:
MTA ..... 59,122 sq. ft.
Conrail 18,044
Parcel Size 77,166

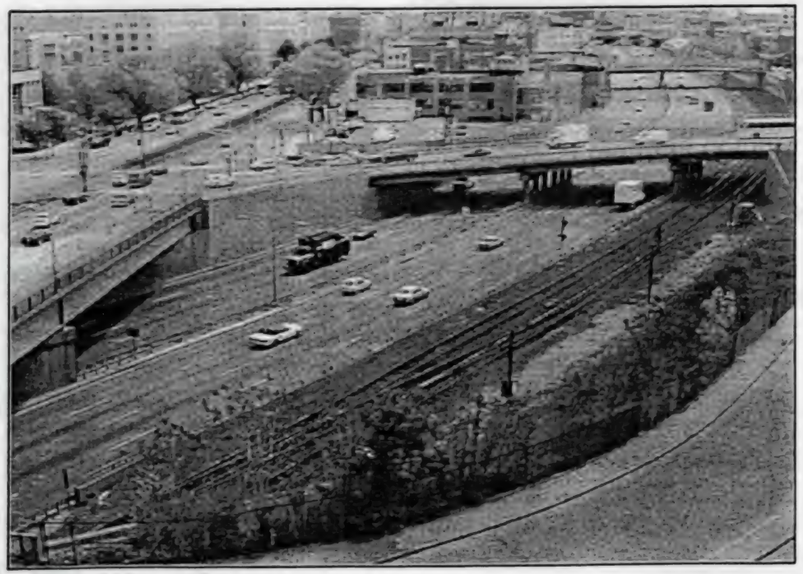
CONTEXT

This parcel is the focus of an area of diverse uses; the BU campus is across Commonwealth Avenue to the north, and a commercial strip is adjacent to the east. The single family Cottage Farm neighborhood fronts Mountfort Street to the South, and the Fuller Building faces Essex Street to the west. Mountfort Street is on a diagonal to the urban grid and the Commonwealth Avenue Bridge is oblique to the turnpike axis.

CONSTRAINTS / OPPORTUNITIES

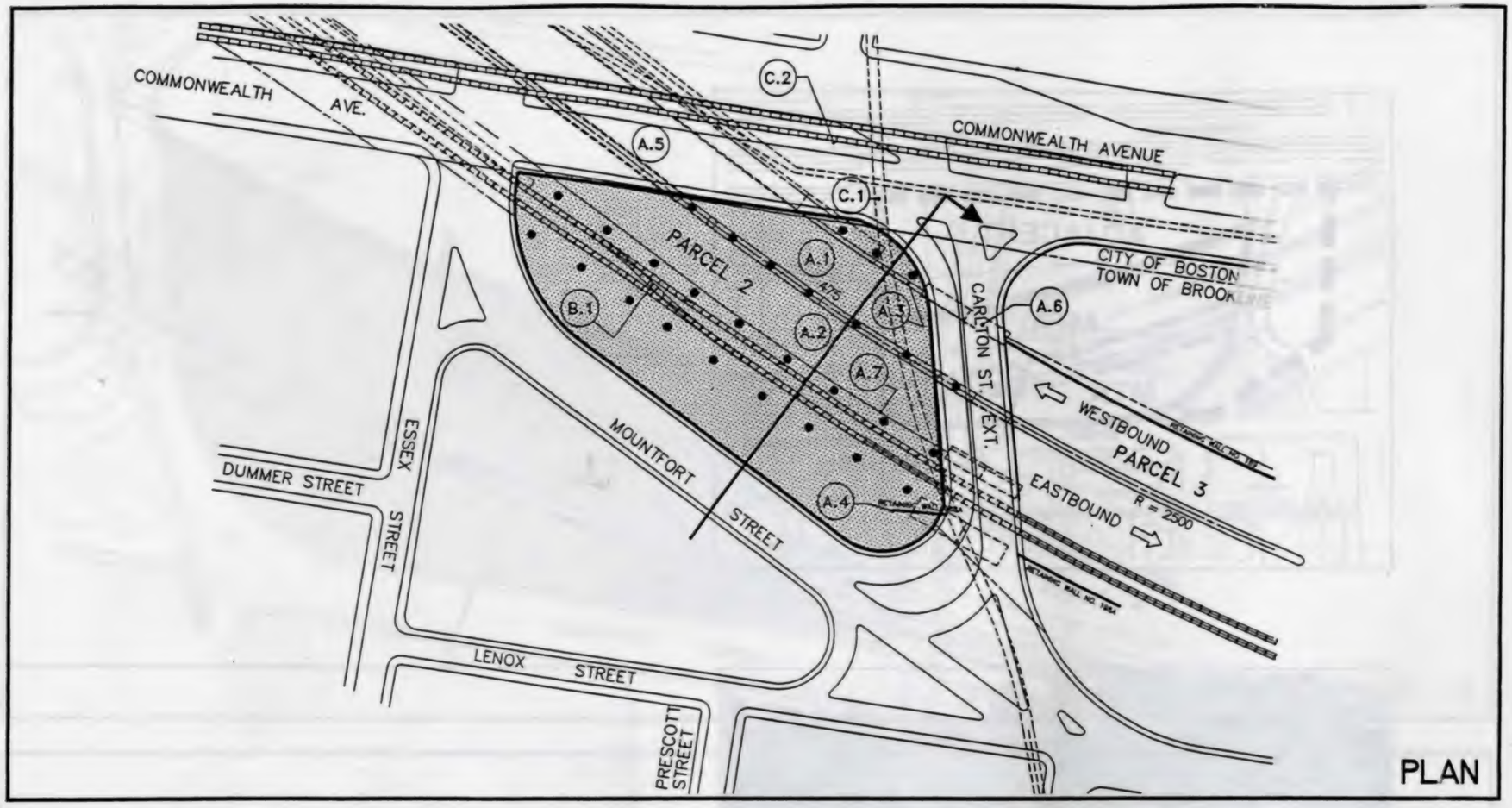
The location and current configuration of the parcel contribute to traffic circulation problems in the area. However, this parcel presents an opportunity for improved traffic circulation and landscaping.

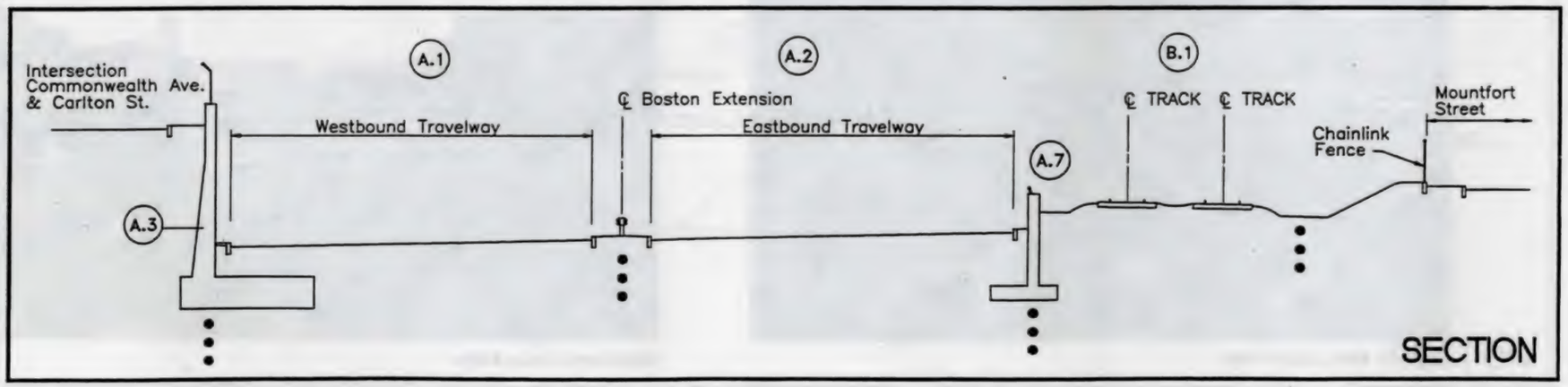




East toward BU

Southwest toward Cottage Farm





ENGINEERING EVALUATION
PARCEL 2

I. Physical Properties

A. Access
1. North–Commonwealth Ave.
2. South–Mountfort Street
3. East–Carlton Street Bridges
4. West–Mountfort & Essex Streets

II. Existing Facilities (See plan and section for location)

A. MTA
1. Mainline Westbound 4–12' travel lanes
2. Mainline Eastbound 4–12' travel lanes
3. North retaining wall 20±
4. South wing Wall 0'–20'±
5. Commonwealth Avenue Bridge
6. Carlton Street Bridge
7. Parapet Wall

B. Conrail
1. Inbound & Outbound track

C. Others
1. South Charles Relief Sewer
2. Green Line tracks

III. Potential Utility Service Connections

A. Electric–Commonwealth Ave./ Mountfort Street
B. Gas–Commonwealth Ave.
C. Steam–None
D. Telephone–Commonwealth Ave.
E. Water–Commonwealth Ave.
F. Sanitary Sewer–Commonwealth Ave.
G. Storm Drain–Commonwealth Ave.

IV. Future Facilities with potential impact on Parcel Development

A. MTA
None

B. Others
1. MBTA Circumferential Transit
2. Local Street reconfiguration

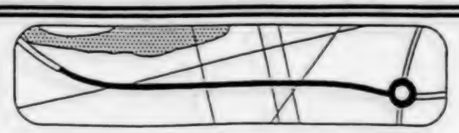
LEGEND

A.1 Existing Ficility

Section

Layout/Property Line

Potential Support Location



URBAN DESIGN

PARCEL 3

Study Area ..... BU Bridge / Kenmore
Location ..... University Road to St. Mary's Street
Access ..... Commonwealth Avenue, St. Mary's Street, Mountfort Street
Constructability ..... A

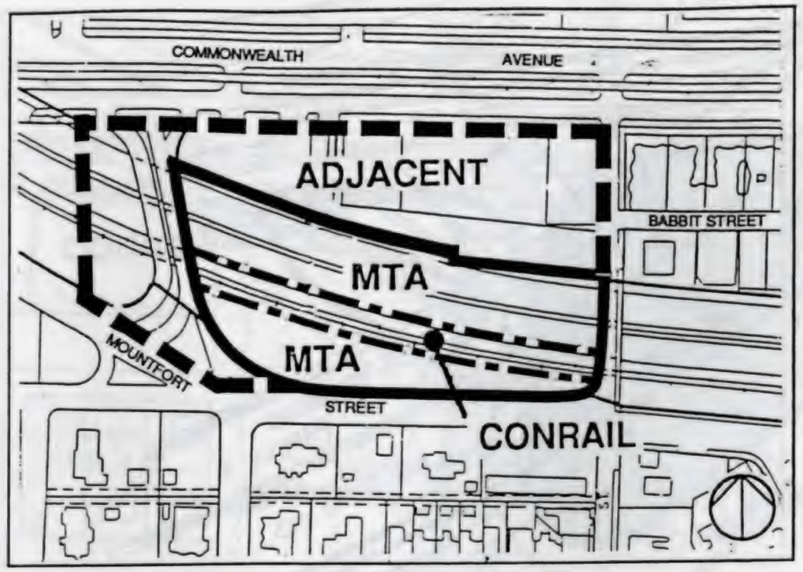
Size:
MTA ..... 119,392 sq. ft.
Conrail 24,640
Parcel Size 144,032
Adjacent Parcel 160,368
Total Area 304,400

CONTEXT

The back of a warehouse and Commonwealth Avenue strip-development border the parcel to the north. Low-rise student housing across Mountfort Street to the south is connected to the academic area by the St. Mary's Street bridge, one of the few pedestrian linkages to the campus.

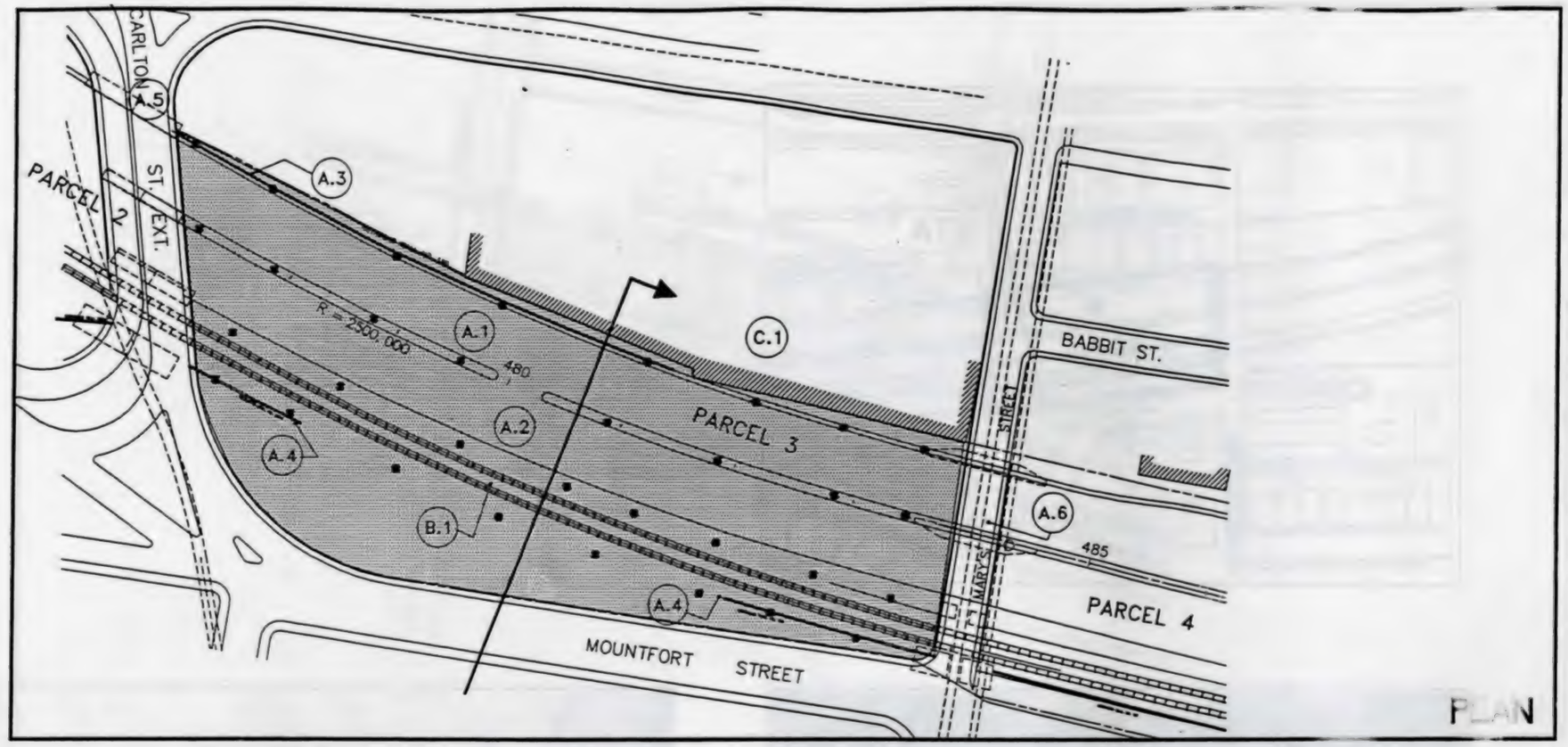
CONSTRAINTS / OPPORTUNITIES

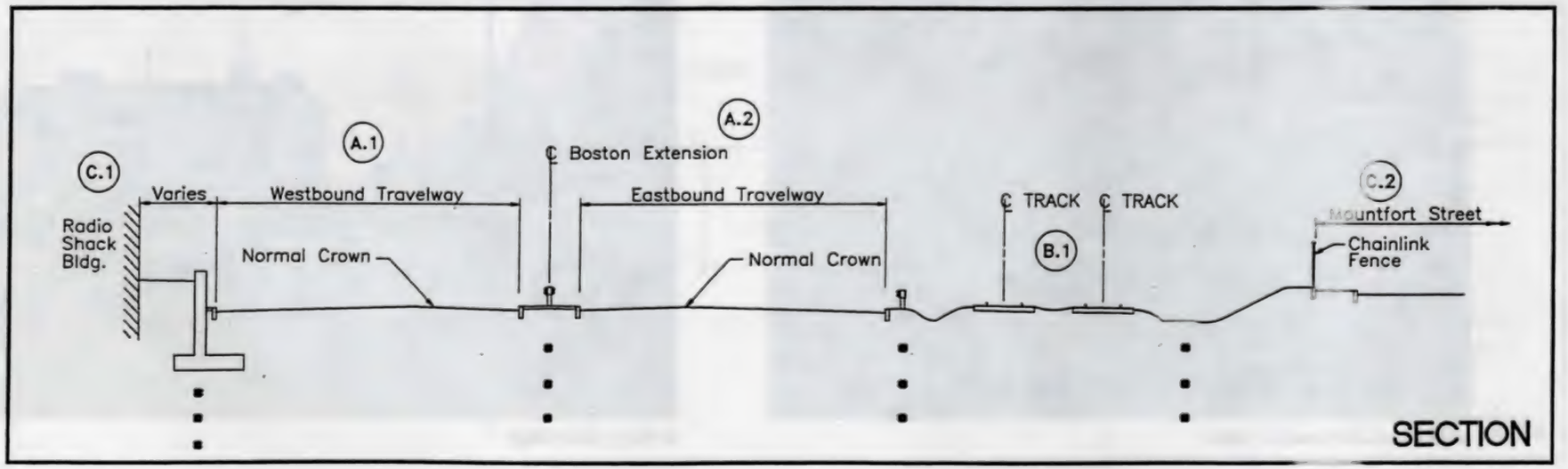
The size and high constructability rating of this parcel makes it a prime candidate for major development. It is also a potential site for a transfer station between the Green Line and the proposed circumferential transit system. Brookline planning officials support the development of the parcel; however, Cottage Farm residents have expressed concern regarding resultant traffic and visual impacts.



East to St. Mary's Street Bridge

West toward Carlton Bridge





ENGINEERING EVALUATION
PARCEL 3

I. Physical Properties

A. Location—Between Carlton Street and St. Mary's Street In Brookline

B. Access
1. North—Abutting Property
2. South—Mountfort Street
3. East—St. Mary's Street Bridge
4. West—Carlton Street Bridges

II. Existing Facilities (See plan and section for location)

A. MTA
1. Mainline Westbound 4—12' travel lanes
2. Mainline Eastbound 4—12' travel lanes
3. North retaining wall 4'—25'±
4. South retaining walls (2)
5. Carlton Street Bridge
6. St. Mary's Street Bridge

B. Conrail
1. Inbound & OUtbound track

C. Others
1. North abutting buildings

III. Potential Utility Service Connections

A. Electric—Mountfort St./St. Mary's St.
B. Gas—Mountfort Street
C. Steam—None
D. Telephone—Mountfort St./Commonwealth Ave.
E. Water—Mountfort St./Commonwealth Ave.
F. Sanitary Sewer—St. Mary's Street
G. Storm Drain—St. Mary's Street

IV. Future Facilities with Potential Impact on Parcel Development

A. MTA
1. WB on/EB off ramps—Beacon Street
2. WB on/EB off ramps—Parking Facility (west)

B. Others
1. MBTA Circumferential Transit

LEGEND

(A.1) Existing Facility

Section

——— Layout/Property LIne

• • • Potential Support Location

URBAN DESIGN

PARCEL 4

Study Area ..... BU Bridge / Kenmore
Location ..... St. Mary's Street to Cummington Street
Access ..... St. Mary's Street, Cummington Street
Constructability ..... A

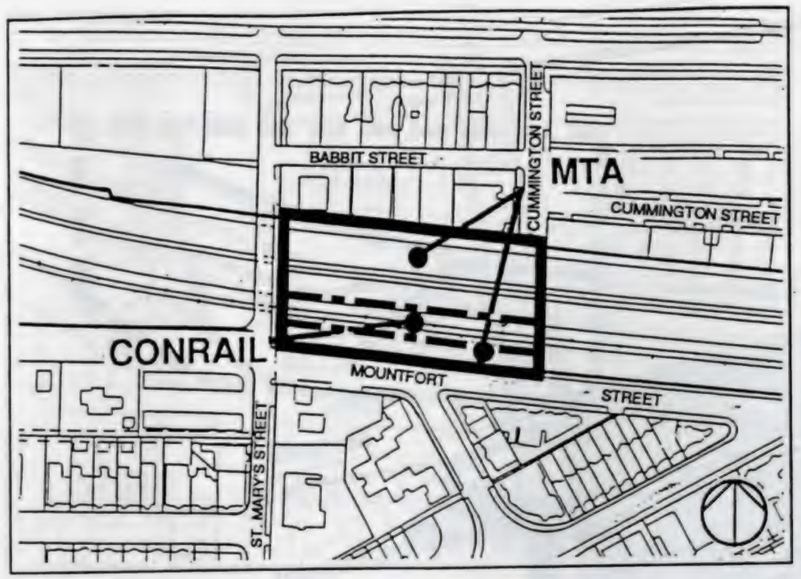
Size:
MTA ..... 66,254 sq. ft.
Conrail 16,217
Parcel Size 82,471

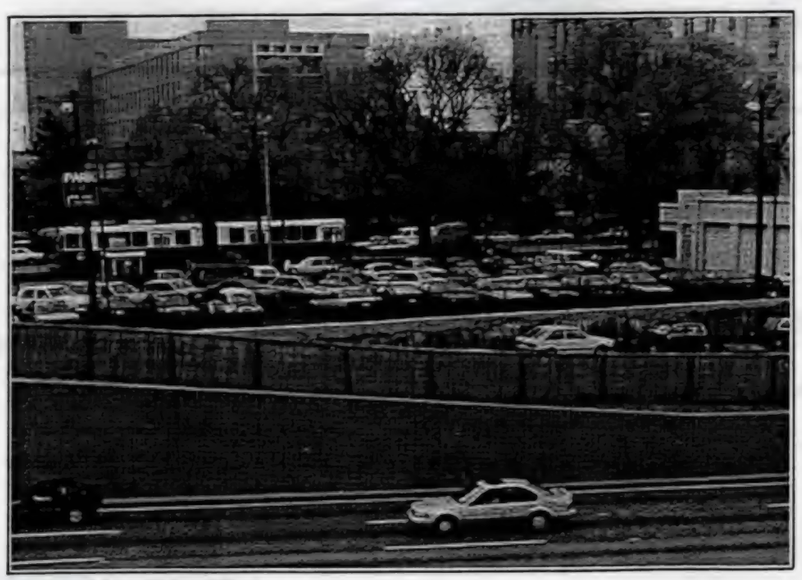
CONTEXT

One to six story buildings on Babbit Street edge the parcel to the north, and low rise apartments are across Mountfort Street to the south. The St. Mary's Street bridge on the western edge could offer access in the future.

CONSTRAINTS / OPPORTUNITIES

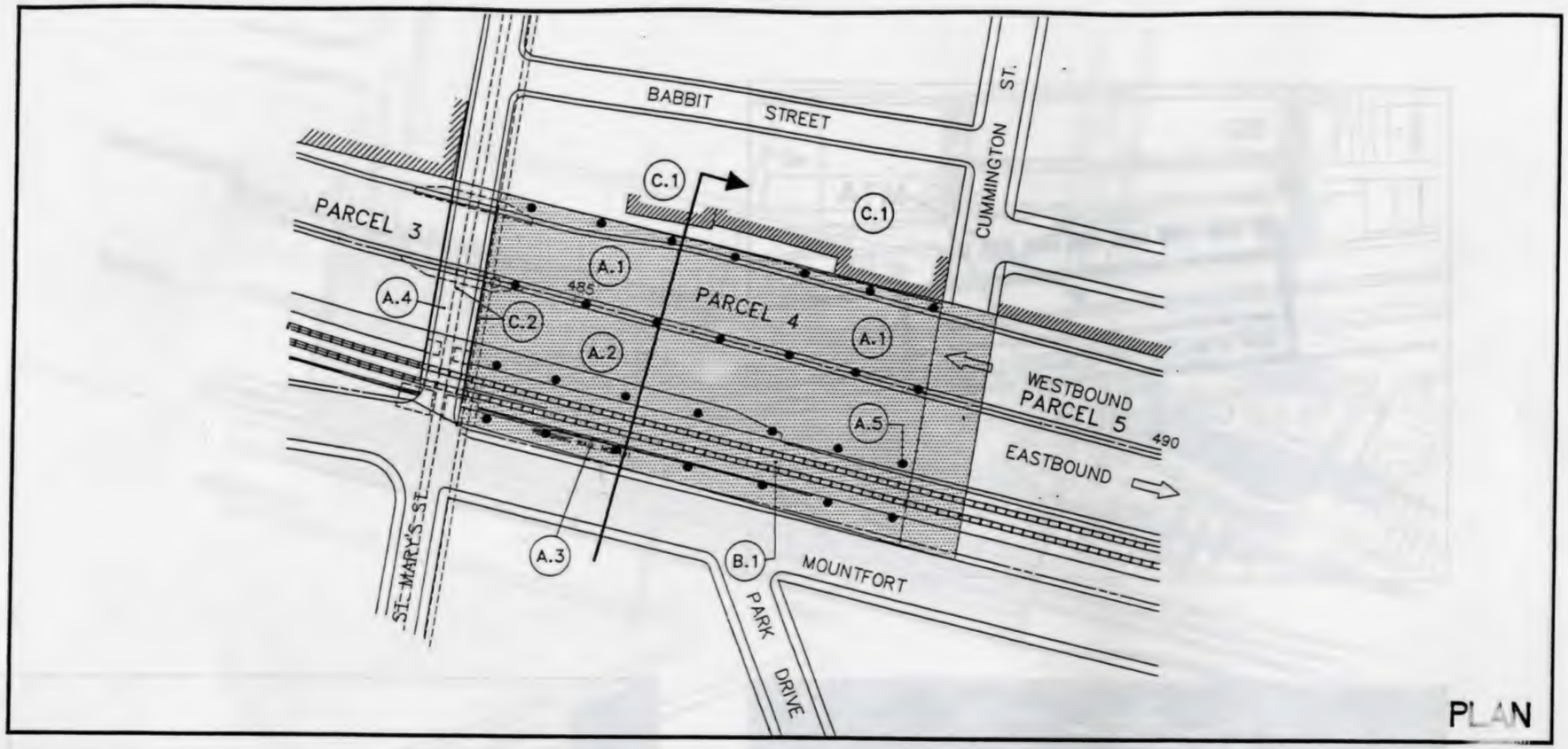
Parcel 4 could be combined with properties on the southeast end of Babbit Street to increase its size and improve its access. The north/south leg of Cummington Street could be extended south to Mountfort Street, perhaps as a pedestrian link between campus and student housing. This parcel could accommodate significant expansion of institutional or residential uses.



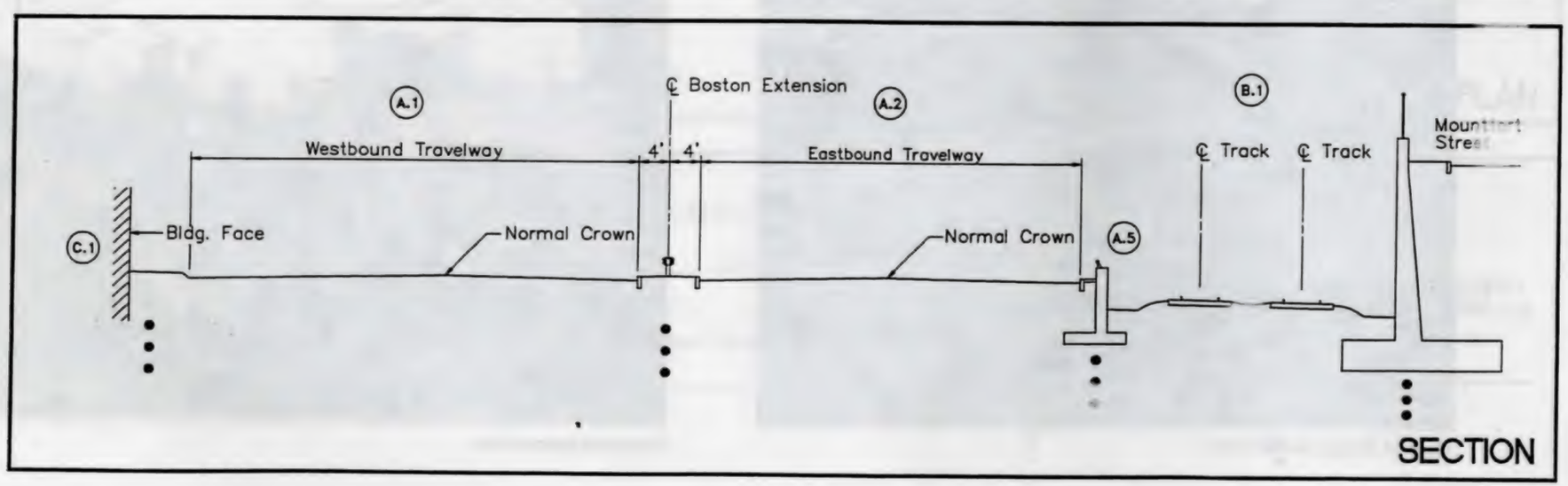


North toward Commonwealth Avenue

St. Mary's Street Bridge



PLAN



SECTION

ENGINEERING EVALUATION
PARCEL 4

I. Physical Properties

A. Location–East of St. Mary's St. in Boston

B. Access
1. North–Abutting Property
2. South–Mountfort Street
3. East–Parcel 5
4. West–St. Mary's St. Bridge

II. Existing Facilities
(See plan and section for location)

A. MTA
1. Mainline Westbound 4–12' travel lanes
2. Mainline Eastbound 4–12' travel lanes
3. South retaining wall, 6'–20'± high
4. St. Mary's Bridge
5. EB breakdown lane
6. W.B. Breakdown lane

B. Conrail
1. Inbound & Outbound track

C. Others
1. North abutting buildings
2. Sewer

III. Potential Utility Service Connections

A. Electric–St.Mary's St./Mountfort St.
B. Gas–Mountfort Street
C. Steam–None
D. Telephone–Mountfort Street
E. Water–Mountfort Street
F. Sanitary Sewer–Mountfort Street
G. Storm Drain–Mountfort Street

IV. Future Facilities with Potential Impact on Development

A. MTA
1. WB on/EB off ramps–Beacon Street
2. WB on/EB off ramps–Parking Facility (West)
3. WB on/EB off ramps–Parking Facility (West)

B. Others
1. MBTA Fenway Commuter Rail Station Upgrade.

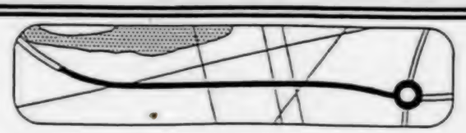
LEGEND

(A.1) Existing Facility

Section

——— Layout/Property Line

• • • Potential Support Location



URBAN DESIGN

PARCEL 5

Study Area ..... BU Bridge / Kenmore
Location ..... Cummington Street to new BU Academic Building
Access ..... Mountfort Street
Constructability ..... A

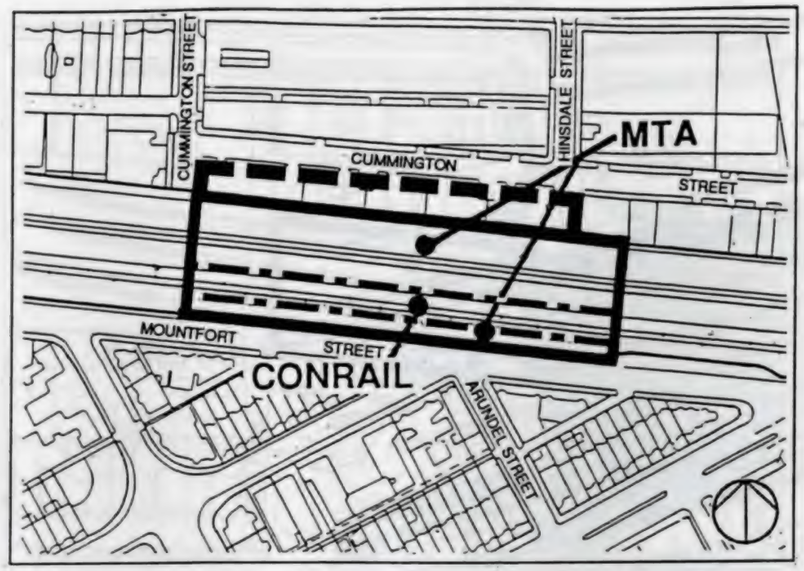
Size:
MTA ..... 105,210 sq. ft.
Conrail 26,390
Parcel Size 131,600
Adjacent Parcel 30,000
Total Area 161,600

CONTEXT

The rear wall of industrial buildings recycled for academic use line the parcel's northern edge. Mountfort Street separates this parcel from the low and mid-rise apartment district to the south and is the only existing access route to the parcel.

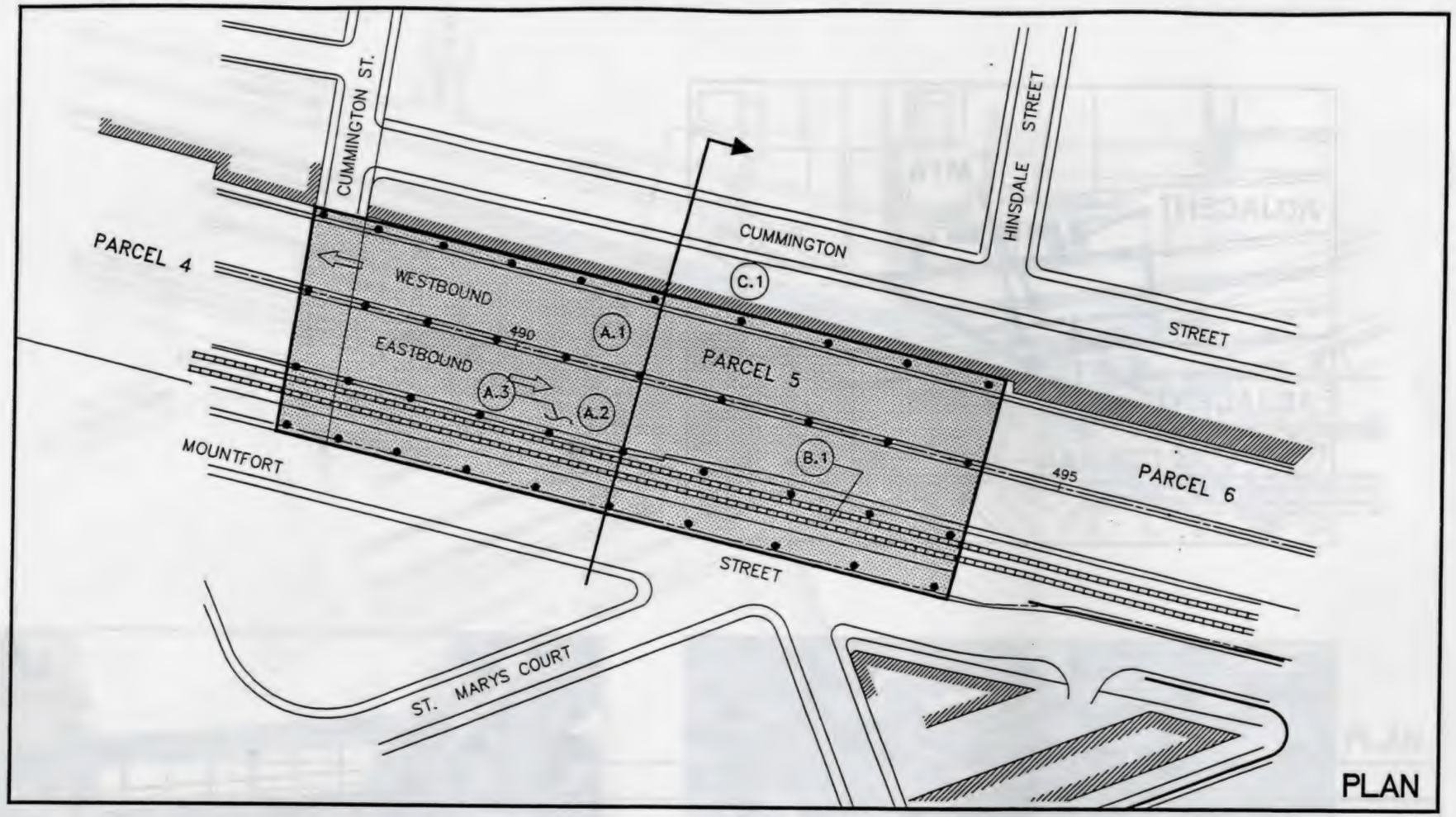
CONSTRAINTS / OPPORTUNITIES

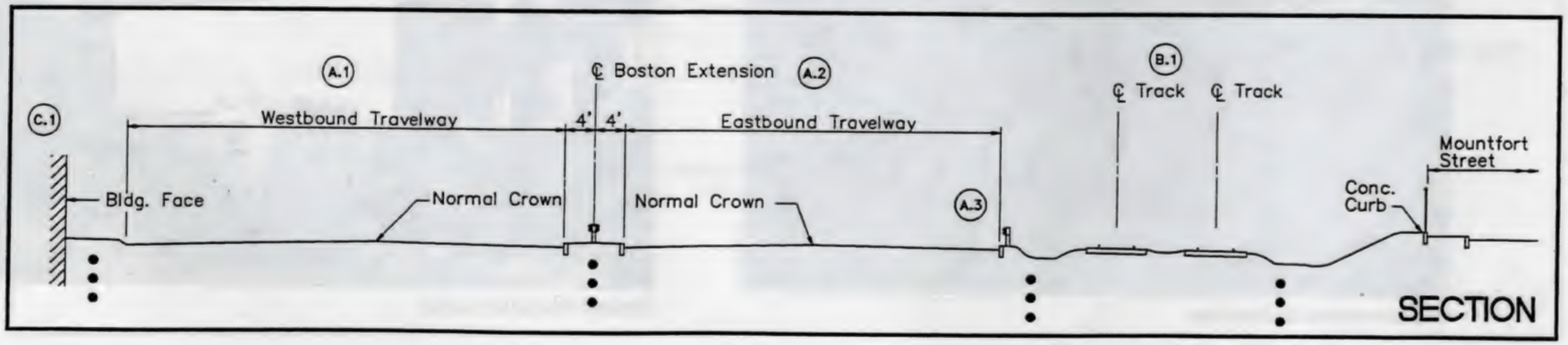
Redevelopment of the academic structures to the north with pedestrian links could provide improved site access and offer convenient central expansion space for the BU campus. Improved vehicular access could be realized by redevelopment that would allow for a connection between Cummington and Mountfort Streets. Parcel 5 could also be integrated with Parcels 4 and 6 to offer a single major site with good access.



Mountfort Street at Arundel Street

East toward Beacon Street





ENGINEERING EVALUATION

PARCEL 5

I. Physical Properties

A. Location—Between St. Mary's Street and Beacon Street in Boston

B. Access
1. North—Abutting Property
2. South—Mountfort Street
3. East—Parcel 6
4. West—Parcel 4

II. Existing Facilities (See plan and section for location)

A. MTA
1. Mainline Westbound 4—12' travel lanes
2. Mainline Eastbound 4—12' travel lanes
3. EB breakdown lane

B. Conrail
1. Inbound & Outbound track

C. Others
1. North abutting buildings

III. Potential Utility Service Connections

A. Electric—Mountfort St./Cummington St.
B. Gas—Mountfort St./Cummington St.
C. Steam—None
D. Telephone—Mountfort Street
E. Water—Mountfort St./Cummington St.
F. Sanitary Sewer—Mountfort St./ Cummington St.
G. Storm Drain—Mountfort St./ Cummington St.

IV. Future Facilities with Potential Impact on Development

A. MTA
1. WB on/EB off ramps—Beacon Street
2. WB on/EB off ramps—Parking Facility (West)
3. WB off/EB on ramps—Parking Facility (West)

B. Others
1. MBTA Fenway Commuter Rail Station Upgrade

LEGEND

(A.1) Existing Facility

Section

Layout/Property Line

Potential Support Location

URBAN DESIGN

PARCEL 6

Study Area ..... BU Bridge / Kenmore
Location ..... Parcel 5 to Beacon Street bridge
Access ..... Beacon Street, Mountfort Street
Constructability ..... B

Size:

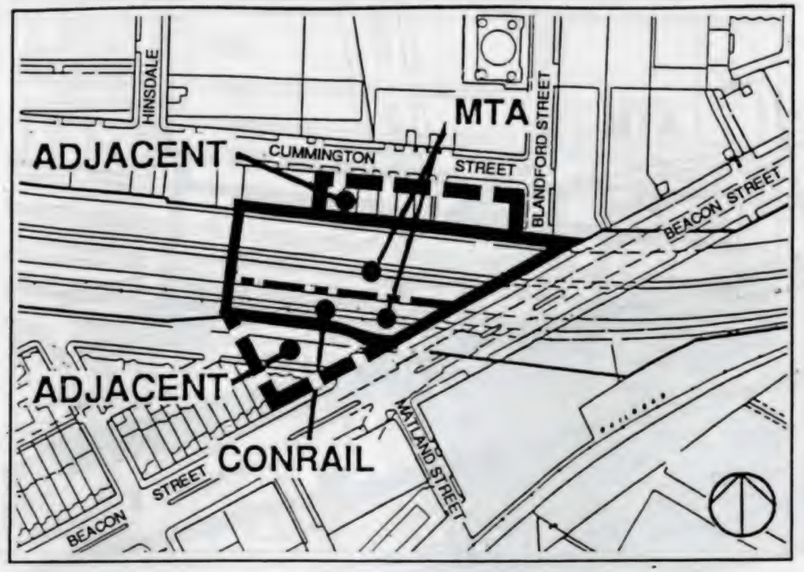
MTA	61,860 sq. ft.
Conrail	17,630
Parcel Size	78,690
Adjacent Parcel	53,540
Total Area	132,090

CONTEXT

New academic buildings form the parcel's solid northern edge, and mid-rise residential buildings are located on the south side of Mountfort Street. Mountfort Street widens and rises sharply to meet the Beacon Street bridge.

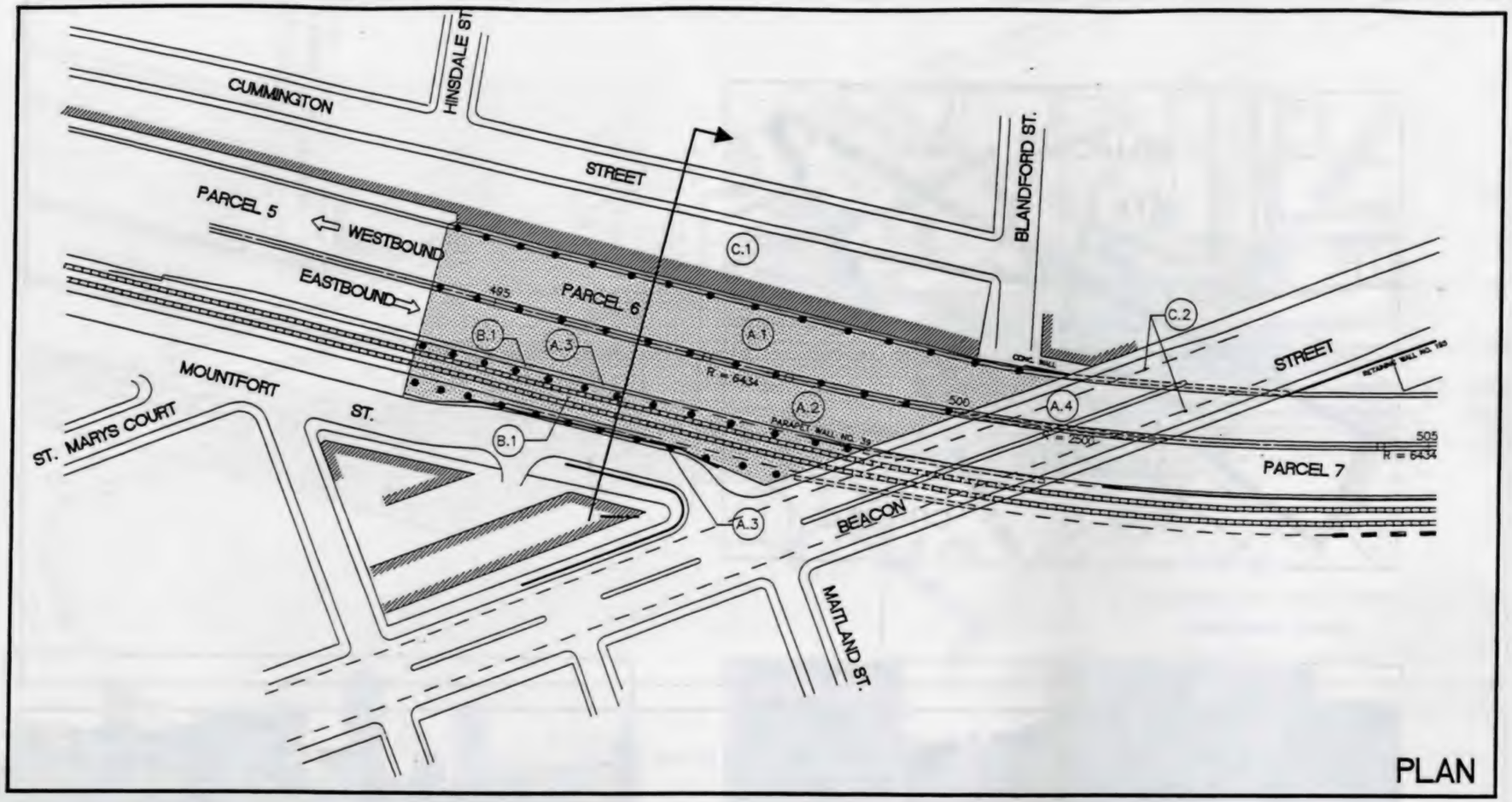
CONSTRAINTS / OPPORTUNITIES

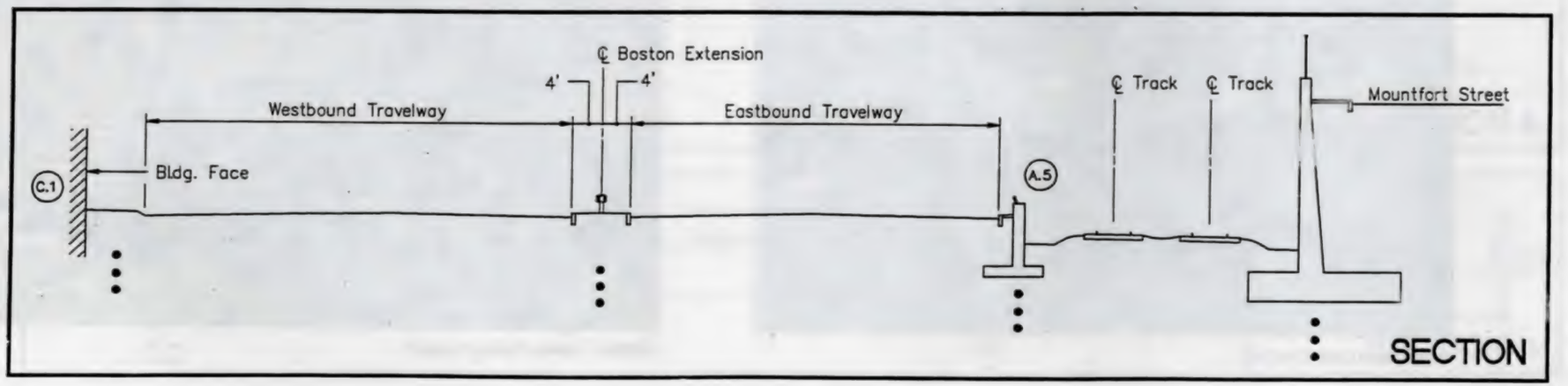
This parcel could accommodate a pair of turnpike ramps, perhaps providing access to and from an air rights parking structure. Alternatively, the parcel might accommodate institutional expansion or similar uses.



Mountfort Street on Southern Edge

Blandford Street at BU Campus





ENGINEERING EVALUATION
PARCEL 6

I. Physical Properties

A. Location–West of Beacon Street in Boston

B. Access
1. North–Abutting Property
2. South–Mountfort Street
3. East–Beacon Street
4. West–Parcel 5

II. Existing Facilities
(See plan and section for location)

A. MTA
1. Mainline Westbound 4–12' travel lanes
2. Mainline Eastbound 4–12' travel lanes
3. South retaining wall
4. Beacon Street bridge
5. Parapet wall

B. Conrail
1. Inbound & Outbound track

C. Others
1. North abutting buildings
2. Green Line tunnel

III. Potential Utility Service Connections

A. Electric–Beacon St./Blandford St./ Cummington St.
B. Gas–Beacon St.
C. Steam–None
D. Telephone–Beacon St.
E. Water–Mountfort St./Beacon St.
F. Sanitary Sewer–Mountfort St./Beacon St.
G. Storm Drain–Mountfort St./Blandford St.

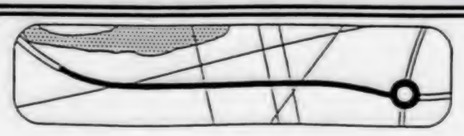
IV. Future Facilities
(With Potential Impact on Development)

A. MTA
1. WB on/EB off ramps–Beacon Street
2. WB off/EB on ramps–Parking Facility (West)
3. WB off/EB on ramps–Brookline Avenue

B. Others
1. MBTA Fenway Commuter Rail Station Upgrade.

LEGEND

(A.1) Existing Facility
Section
Layout/Property Line
Potential Support Location



URBAN DESIGN

PARCEL 7

Study Area ..... BU Bridge / Kenmore
Location ..... Beacon Street to Brookline Avenue
Access ..... Beacon Street, Brookline Avenue, adjacent parcels
Constructability ..... A-B

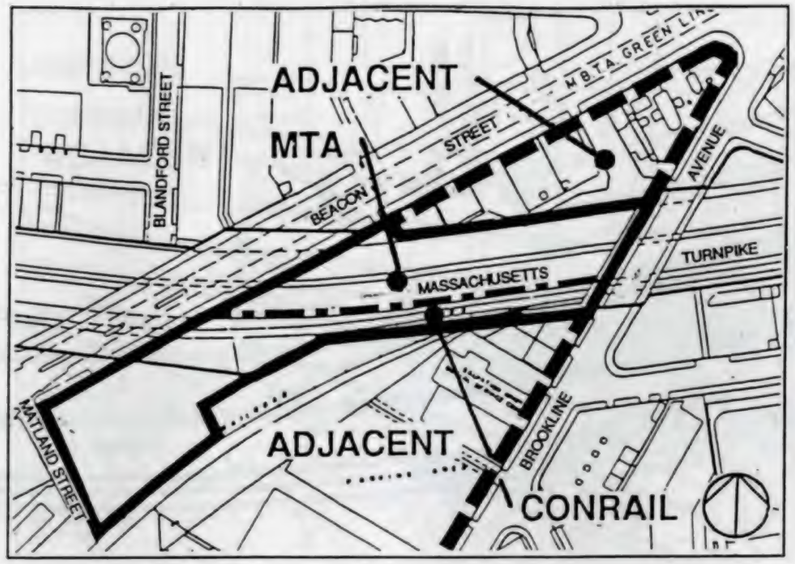
Size:
MTA ..... 104,154 sq. ft.
Conrail 42,000
Parcel Size 146,154
Adjacent Parcels .. 265,250
Total Area 411,404

CONTEXT

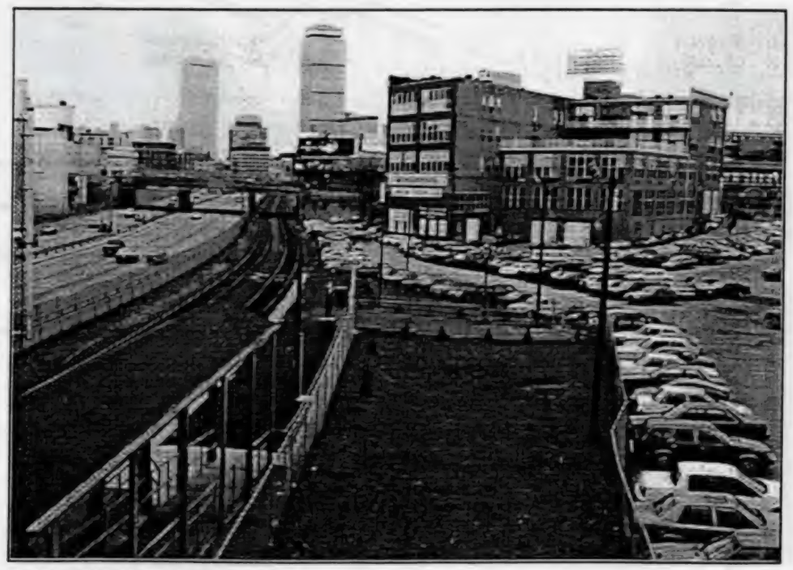
This parcel occupies a key location between major arterials one block south of Kenmore Square. Adjacent development is fragmented with small structures and utility services to the north. On-grade parking on the railroad right-of-way and adjacent property is to the south of parcel 7.

CONSTRAINTS / OPPORTUNITIES

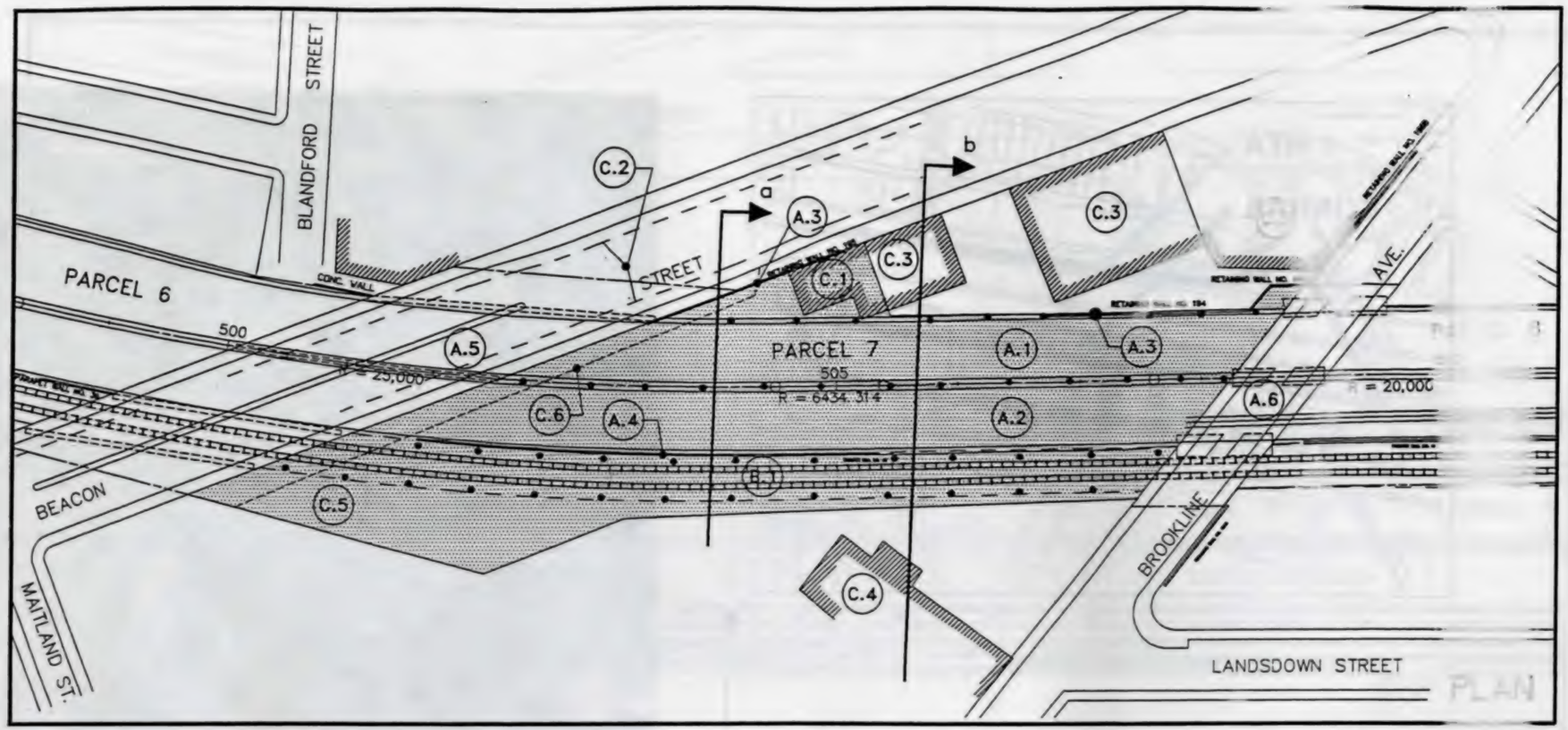
The parcel ends are crossed by obliquely angled bridges. The adjacent vacant land invites parcel expansion and provides the opportunity for a 10 acre development that could significantly improve the area. The angular street network could be improved by realignments, and grade changes on adjacent parcels would make below-grade parking feasible.

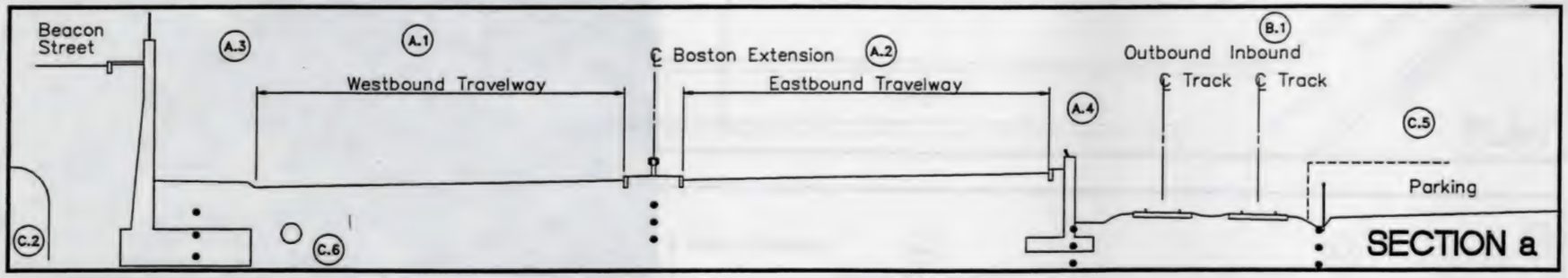


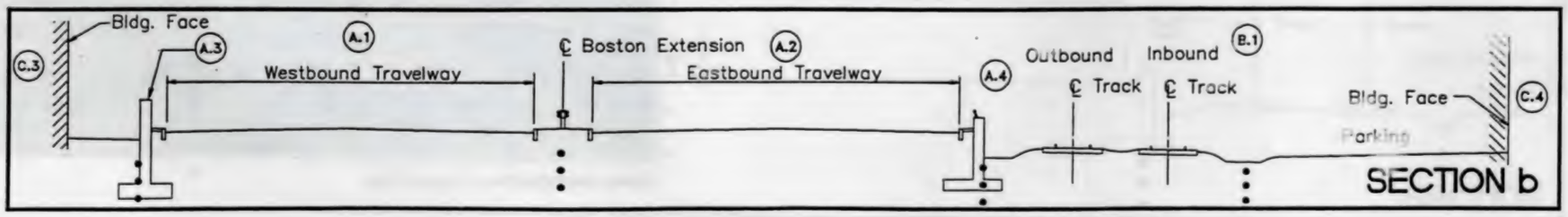
North toward Utility Structures



East from Yawkey Railroad Station







ENGINEERING EVALUATION

PARCEL 7

I. Physical Properties

A. Location–Between Beacon Street and Brookline Avenue in Boston

B. Access
1. North–Abutting property
2. South–Abutting property
3. East–Brookline Avenue
4. West–Beacon Street

II. Existing Facilities
(See plan and section for location)

A. MTA
1. Mainline Westbound 4–12' travel lanes
2. Mainline Eastbound 4–12' travel lanes
3. North retaining walls, 4'± high
4. Parapet Wall
5. Beacon Street bridge
6. Brookline Avenue bridge
7. Utility bridge

B. Conrail
1. Inbound & Outbound tracks

C. Others
1. MBTA Green Line ventilation facility
2. MBTA Green Line tunnel
3. North abutting buildings
4. South abutting building
5. MBTA Fenway RR station
6. BW&SC water main

III. Potential Utility Service Connections

A. Electric–Beacon St./Brookline Ave.
B. Gas–Beacon St./Brookline Ave.
C. Steam–None
D. Telephone–Beacon St./Brookline Ave.
E. Water–Beacon St./Brookline Ave.
F. Sanitary Sewer–Beacon St./Brookline Ave.
G. Storm Drain–Brookline Ave.

IV. Future Facilities with Potential Impact on Development

A. MTA
1. WB on/EB off ramps–Beacon Street
2. WB off/EB on ramps–Parking Facility (St. Mary's Street to Beacon Street)
3. WB off/EB on ramps–Brookline Avenue
4. WB on/EB off ramps–Parking Facility (East of Brookline Avenue)

B. Others
1. MBTA Fenway Commuter Rail Station Upgrade
2. Circumferential Transit

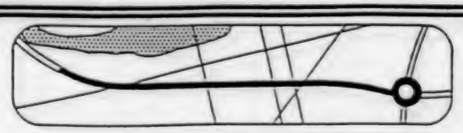
LEGEND

(A.1) Existing Facility

Section

Layout/Property Line

• • • Potential support Location



URBAN DESIGN

PARCEL 8

Study Area ..... BU Bridge / Kenmore
Location ..... Brookline Avenue to Ipswich Street
Access ..... Brookline Avenue, Newbury Street
Constructability ..... A

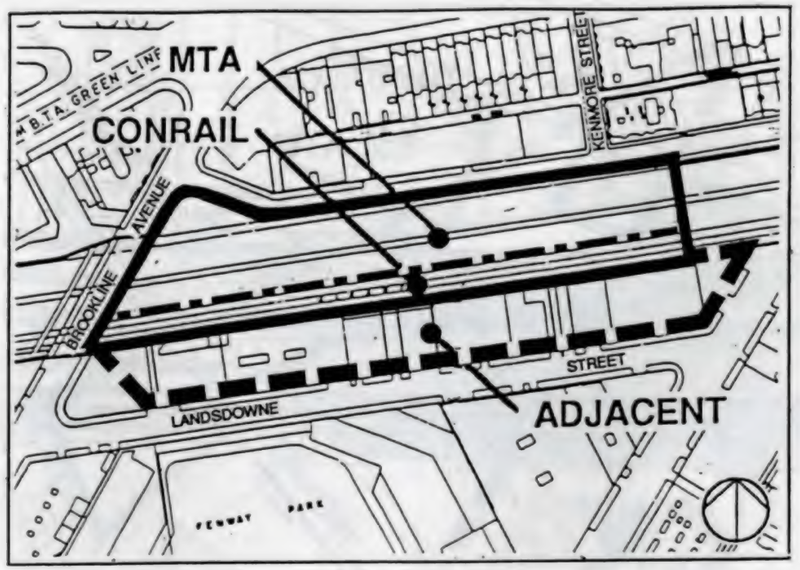
Size:
MTA ..... 107,583 sq. ft.
Conrail 27,432
Parcel Size 135,015
Adjacent Parcels ... 128,600
Total 263,615

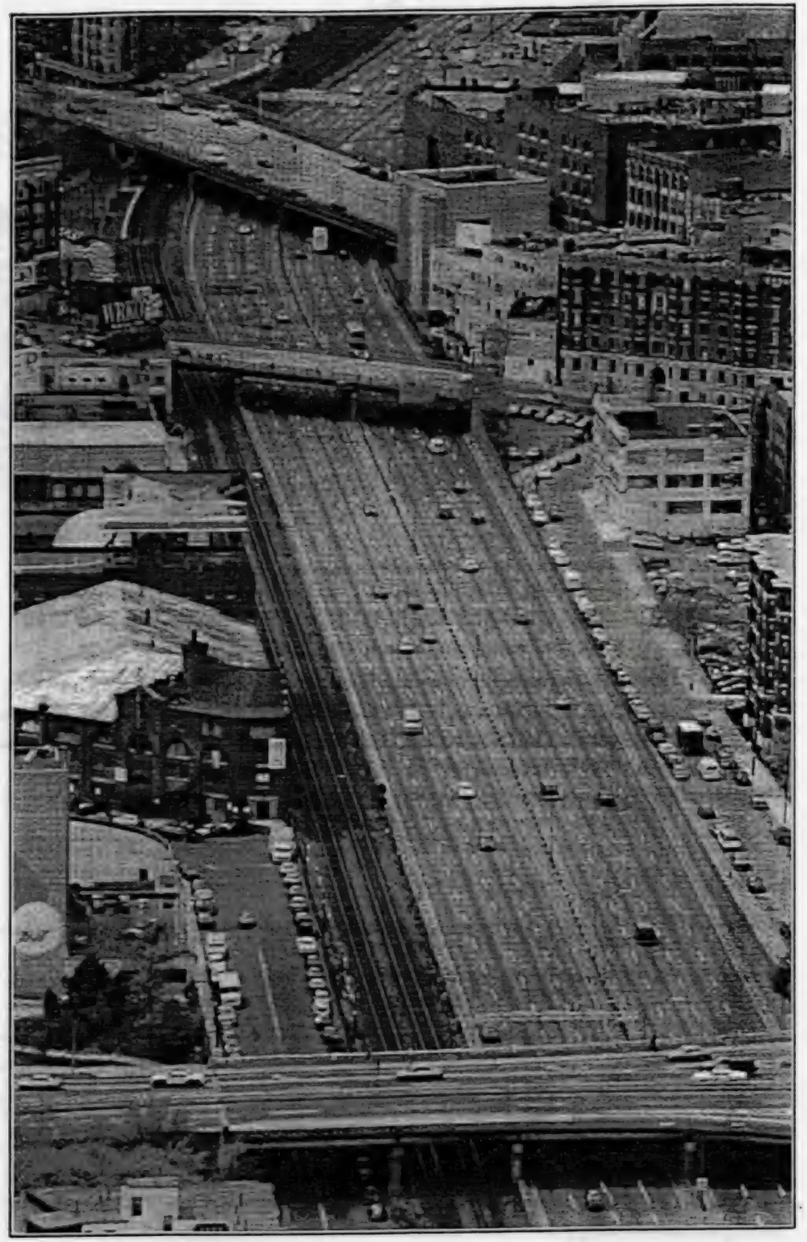
CONTEXT

Newbury Street, elevated slightly above the turnpike for most of the parcel's length, rises abruptly to meet the Brookline Avenue bridge. A three-story office building and on-grade parking front the northern edge of the parcel. The rear walls of two to four story parking, commercial, and entertainment structures along Lansdowne Street define the parcel's southern edge. The Brookline Avenue Bridge is elevated well above the northern and southern edges of the parcel.

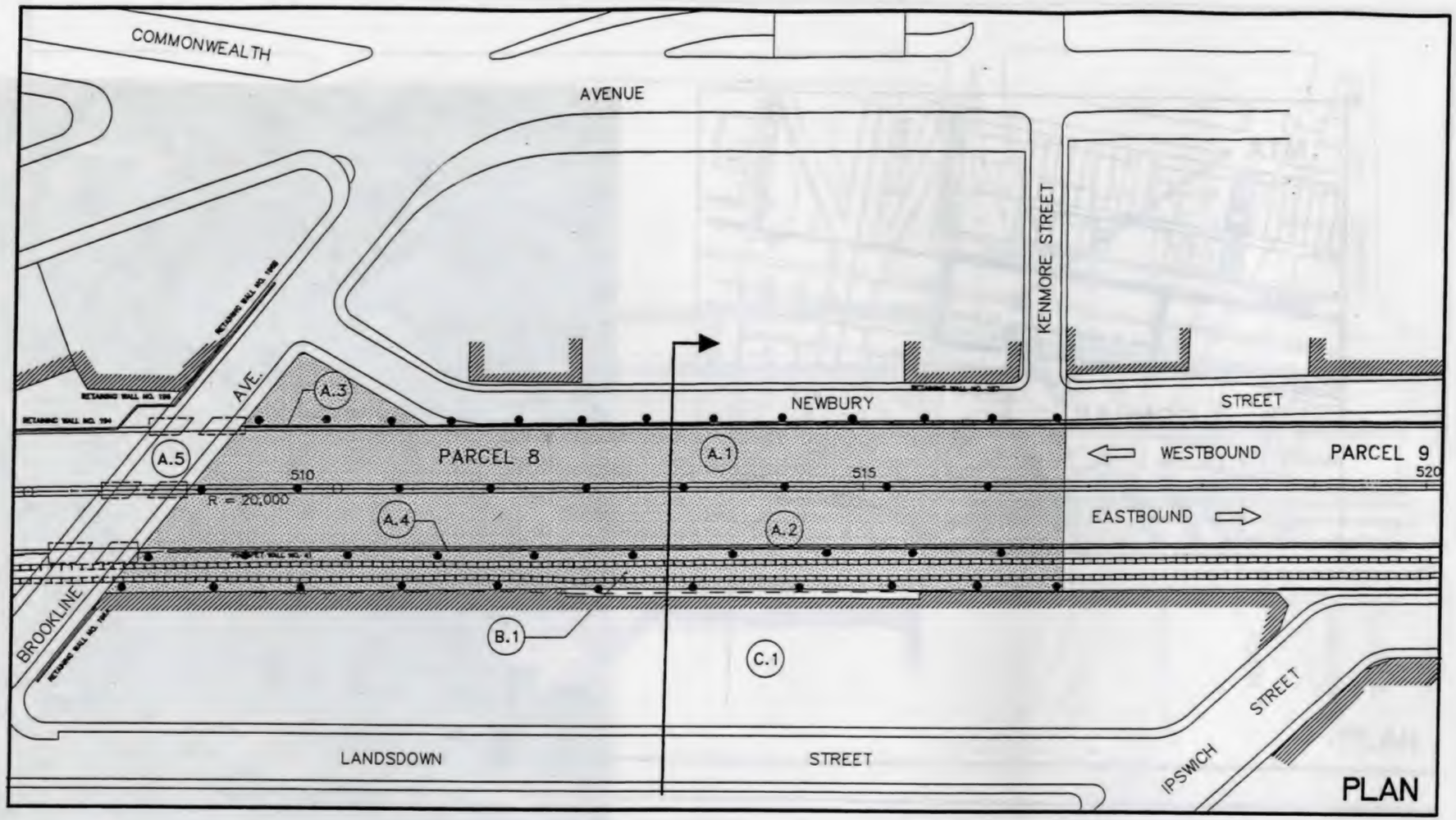
CONSTRAINTS / OPPORTUNITIES

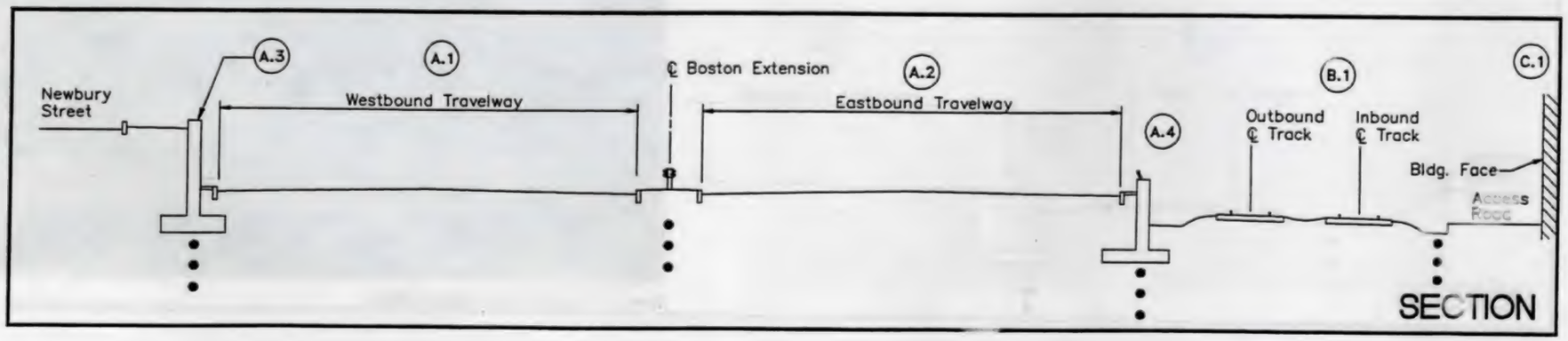
Parcel 8 could accommodate turnpike access ramps and air rights parking close to Fenway Park. The parcel could also be expanded to the east or could incorporate Lansdowne Street properties to the south.





Bowker Overpass toward Beacon Street





ENGINEERING EVALUATION
PARCEL 8

I. Physical Properties

A. Location—East of Brookline Ave. in Boston

B. Access
1. North—Newbury St./Abutting Property
2. South—Abutting Property
3. East—Parcel 9
4. West—Brookline Avenue

II. Existing Facilities (See plan and section for location)

A. MTA
1. Mainline Westbound 4'—12 travel lanes
2. Mainline Eastbound 4—12' travel lanes
3. North retaining wall, 12' to 20'± high
4. Parapet Wall
5. Brookline Avenue Bridge

B. Conrail
1. Inbound & Outbound

C. Others
1. South abutting buildings

III. Potential Utility Service Connections

A. Electric—Brookline Ave./Newbury St.
B. Gas—Brookline Ave./Newbury St.
C. Steam—None
D. Telephone—Brookline Avenue
E. Water—Brookline Avenue/Newbury Street
F. Sanitary Sewer—Brookline Ave./Newbury St.
G. Storm Drain—Brookline Ave./Newbury St.

IV. Future Facilities with Potential Impact on Development

A. MTA
1. WB off/EB on ramps—Parking Facility (West)
2. WB on/EB off ramps—Brookline Avenue
3. WB off/EB on ramps—Parking Facility (East)

B. Others
1. MBTA Fenway Commuter Rail Station Upgrade
2. Circumferential Transit

LEGEND

(A.1) Existing Facility

Section

Layout/Property Line

Potential Support Location

URBAN DESIGN

PARCEL 9

Study Area ..... BU Bridge / Kenmore
Location ..... Ipswich Street to Charlesgate West
Access ..... Newbury Street, Ipswich Street
Constructability ..... A

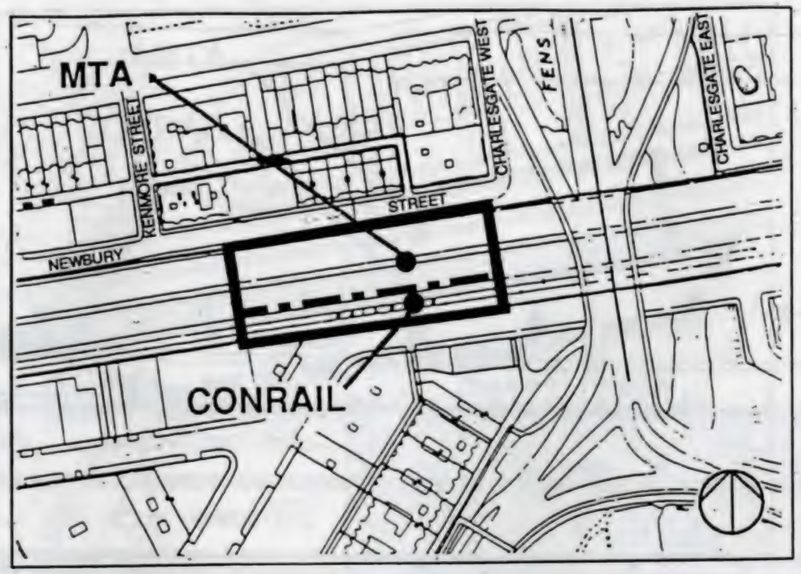
Size:
MTA ..... 49,524 sq. ft.
Conrail 13,789
Parcel Size 63,313

CONTEXT

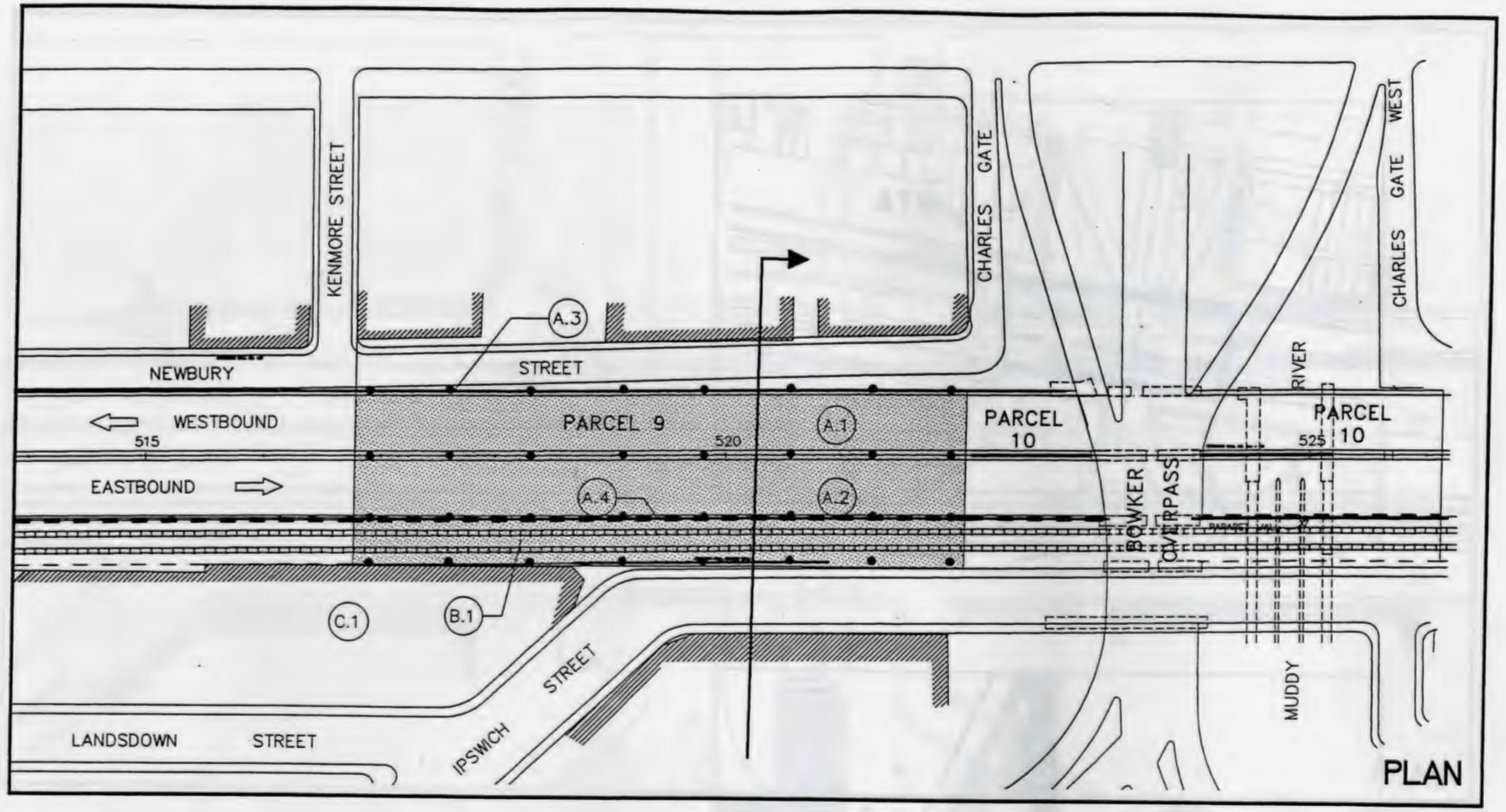
Mid-rise apartment buildings front Newbury Street which is slightly above turnpike elevation. To the south, Ipswich Street is at the same grade as the turnpike and is edged by low-rise industrial and commercial uses. The parcel's eastern end marks the Charlesgate opening to the Fens.

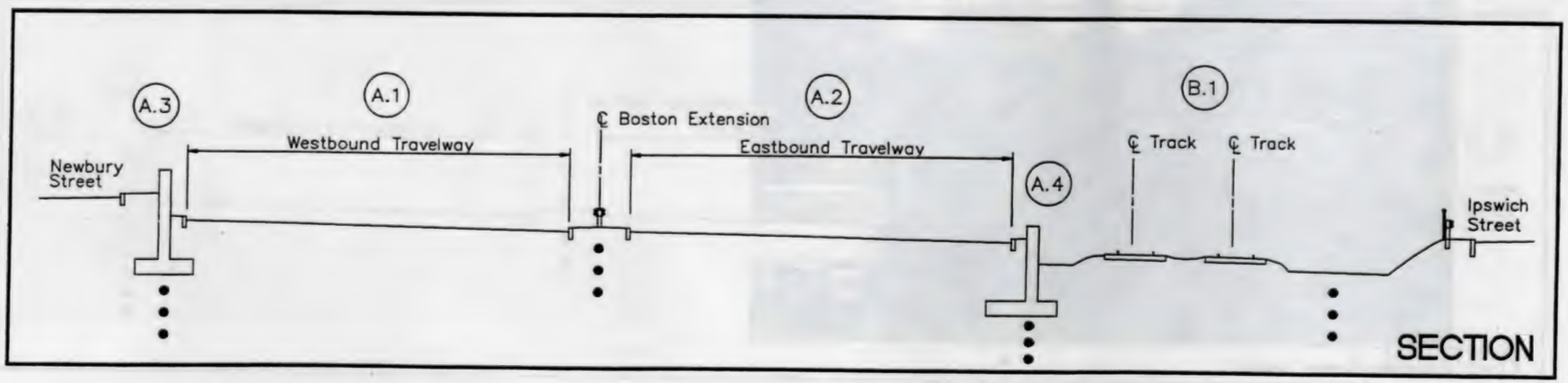
CONSTRAINTS / OPPORTUNITIES

The significant grade separation between air rights development and adjacent streets makes parcel access difficult. This parcel is developable only in combination with Parcel 8. Probable uses are turnpike access ramps and air rights parking. However, there is neighborhood concern about the visual impact of a parking structure on the residential area to the north of this parcel.



Bowker Overpass toward Beacon Street





ENGINEERING EVALUATION
PARCEL 9

I. Physical Properties

A. Location–Between Brookline Avenue and Bowker Overpass in Boston

B. Access
1. North–Newbury Street
2. South–Abutting Property Ipswich Street
3. East–Parcel '0'
4. West –Parcel 8

II. Existing Facilities (See plan and section for location)

A. MTA
1. Mainline Westbound 4'–12 travel lanes
2. Mainline Eastbound 4'–12 travel lanes
3. North retaining wall
4. Parapet Wall

B. Conrail
1. Inbound & Outbound

C. Others
1. South–abutting building

III. Potential Utility Service Connections

A. Electric–Newbury St./Ipswich St.
B. Gas–Newbury St./Ipswich St.
C. Steam–None
D. Telephone–Newbury St./Ipswich St.
E. Water–Newbury St./Ipswich St.
F. Sanitary Sewer–Newbury St./Ipswich St.
G. Storm Drain–Newbury St./Ipswich St.

IV. Future Facilities with Potential Impact on Development

A. MTA
1. WB off/EB on ramps–Parking Facilities (West)
2. WB on/EB off ramps–Brookline Avenue
3. WB off/EB on ramps–Parking Facilities (East)

B. Others
None

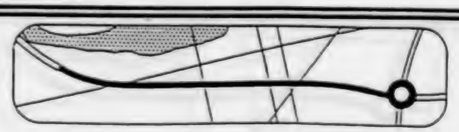
LEGEND

(A.1) Existing Ficility

Section

Layout/Property Line

• • • Potential Support Location



URBAN DESIGN

PARCEL 10

Study Area ..... Between BU Bridge / Kenmore and Massachusetts Avenue
Location ..... Charlesgate West to Charlesgate East
Access ..... Bowker Overpass
Constructability C

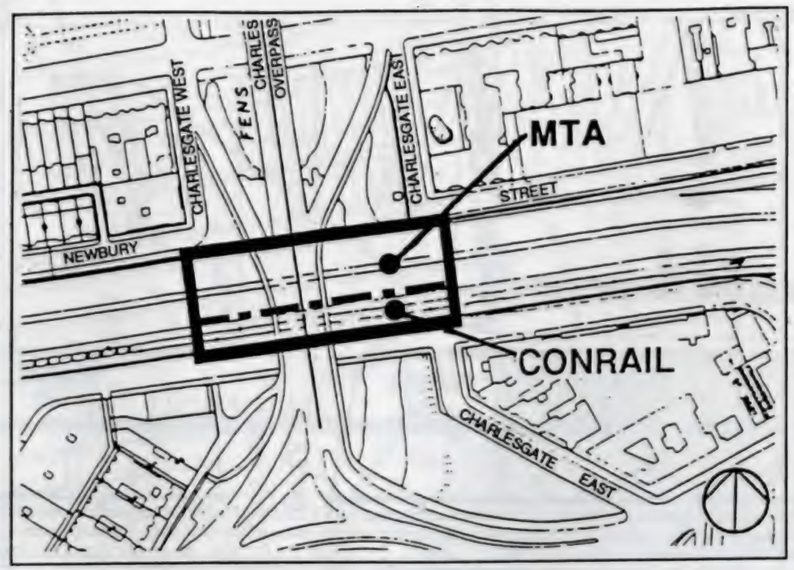
Size:
MTA ..... 39,078 sq. ft.
Conrail 11,458
Parcel Size 50,536

CONTEXT

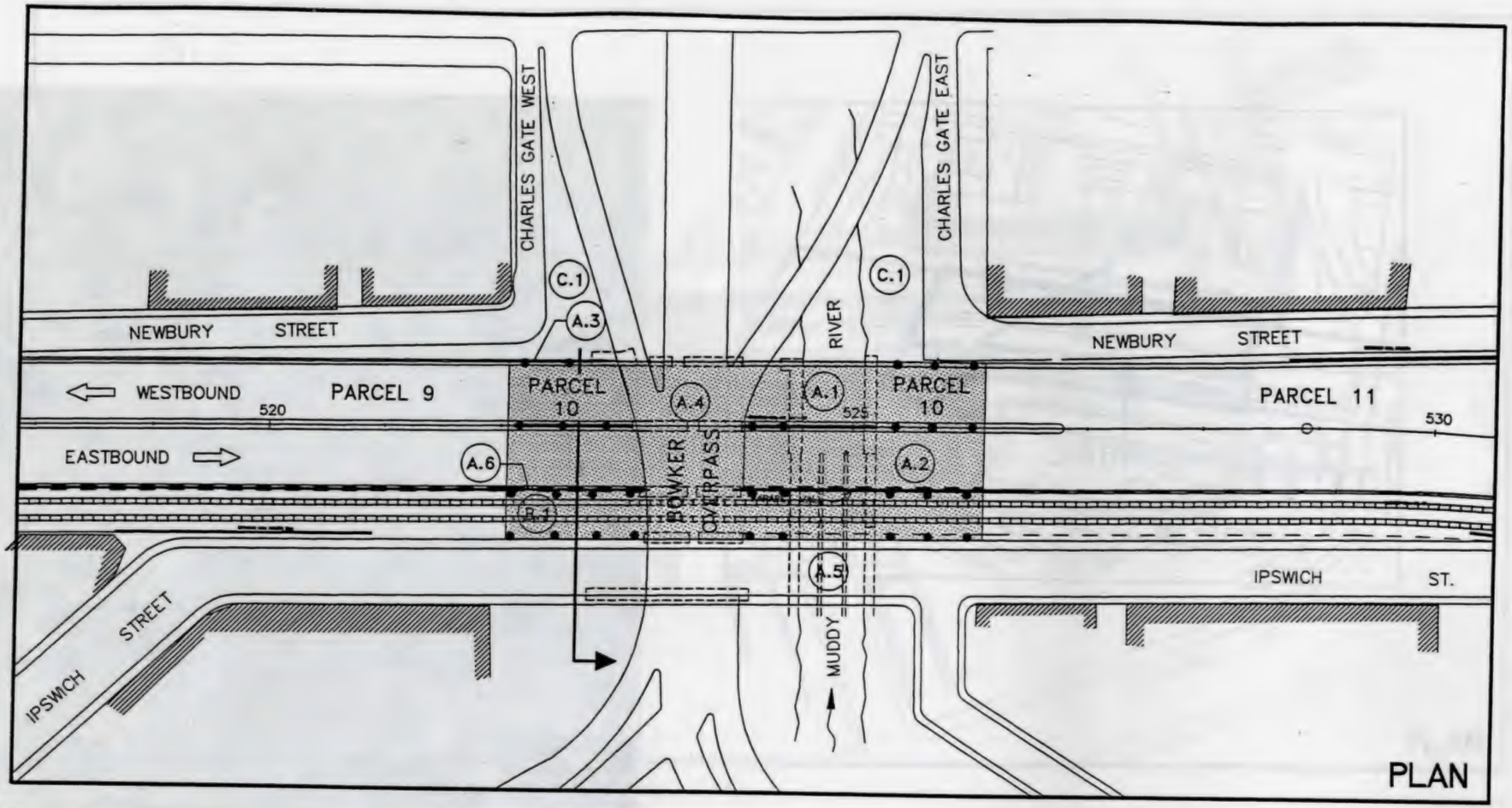
This parcel is located in an environmentally sensitive area; the Bowker Overpass dominates the area visually and the Muddy River flows in a constricted and altered channel underneath.

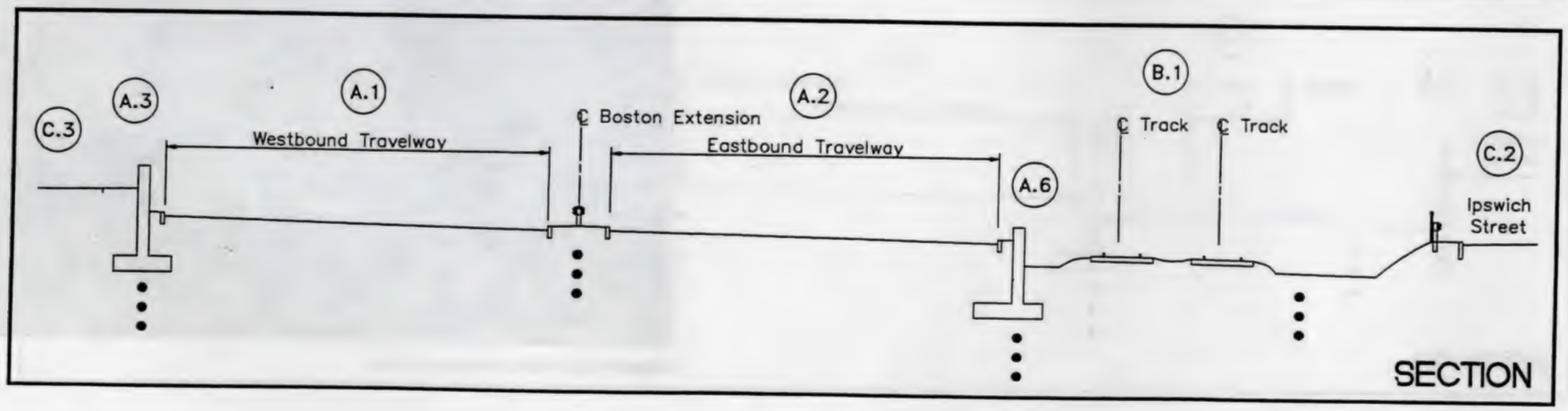
CONSTRAINTS / OPPORTUNITIES

The low constructability rating reflects the presence of the Green Line transit tunnel in addition to the complexities of the overpass and river channel. Development should be limited to landscape improvements and improvements to the Bowker Overpass to facilitate pedestrian and bicycle access from the Fens to the Charles River.



East toward Bowker Overpass





ENGINEERING EVALUATION
PARCEL 10

I. Physical Properties

A. Location–At the Bowker Overpass in Boston

B. Access
1. North–Abutting Property
2. South–Ipswich St.
3. East–Parcel 11
4. West–Parcel 9

II. Existing Facilities
(See plan and section for location)

A. MTA
1. Mainline Westbound 4–12' travel lanes
2. Mainline Eastbound 4–12' travel lanes
3. North retaining wall
4. Bowker Overpass Bridge
5. Muddy River conduit
6. Parapet Wall

B. Conrail
1. Inbound & Outbound track

C. Others
1. North–adjacent park land

III. Potential Utility Service Connections

A. Electric–Newbury St. (east & west)/Ipswich St.
B. Gas–Newbury St. (east & west)/Ipswich St.
C. Steam–None
D. Telephone–Newbury St. (east & west)/ Ipswich St.
E. Water–Newbury St. (east & west)/Ipswich St.
F. Sanitary Sewer–Charles Gate East
G. Storm Drain–Charles Gate East

IV. Future Facilities with Potential Impact on Development

A. Closure of WB On Ramp–
1. Massachusetts Ave.
2. Revision to Mainline Adjustment
3. Revision to B on Ramp–Mass. Ave.

B. Others
None

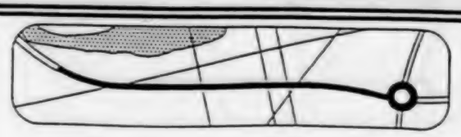
LEGEND

(A.1) Existing Facility

Section

——— Layout/Property Line

• • • Potential Support Location



URBAN DESIGN

PARCEL 11

Study Area ..... Massachusetts Avenue
Location ..... Charlesgate East to Ipswich Apartments
Access ..... Ipswich Street, Newbury Street, Massachusetts Avenue
Constructability ..... B

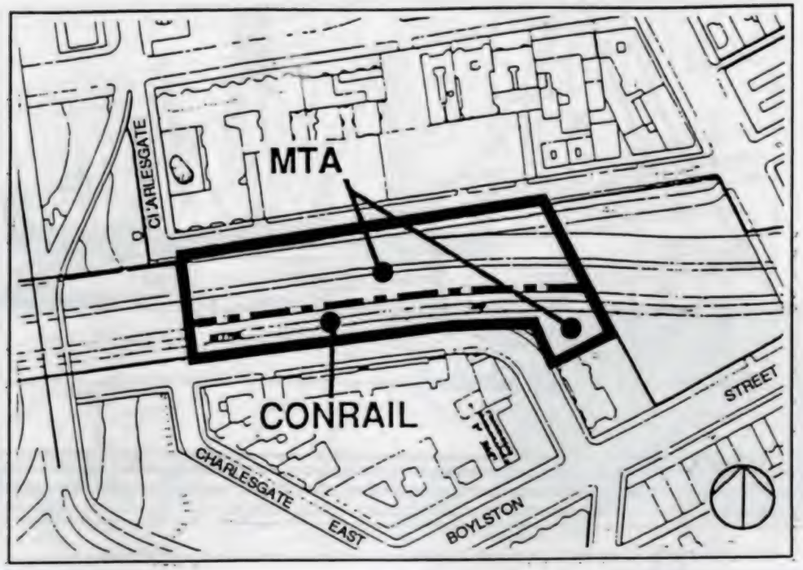
Size:
MTA ..... 90,678 sq. ft.
Conrail 25,498
Parcel Size 116,176

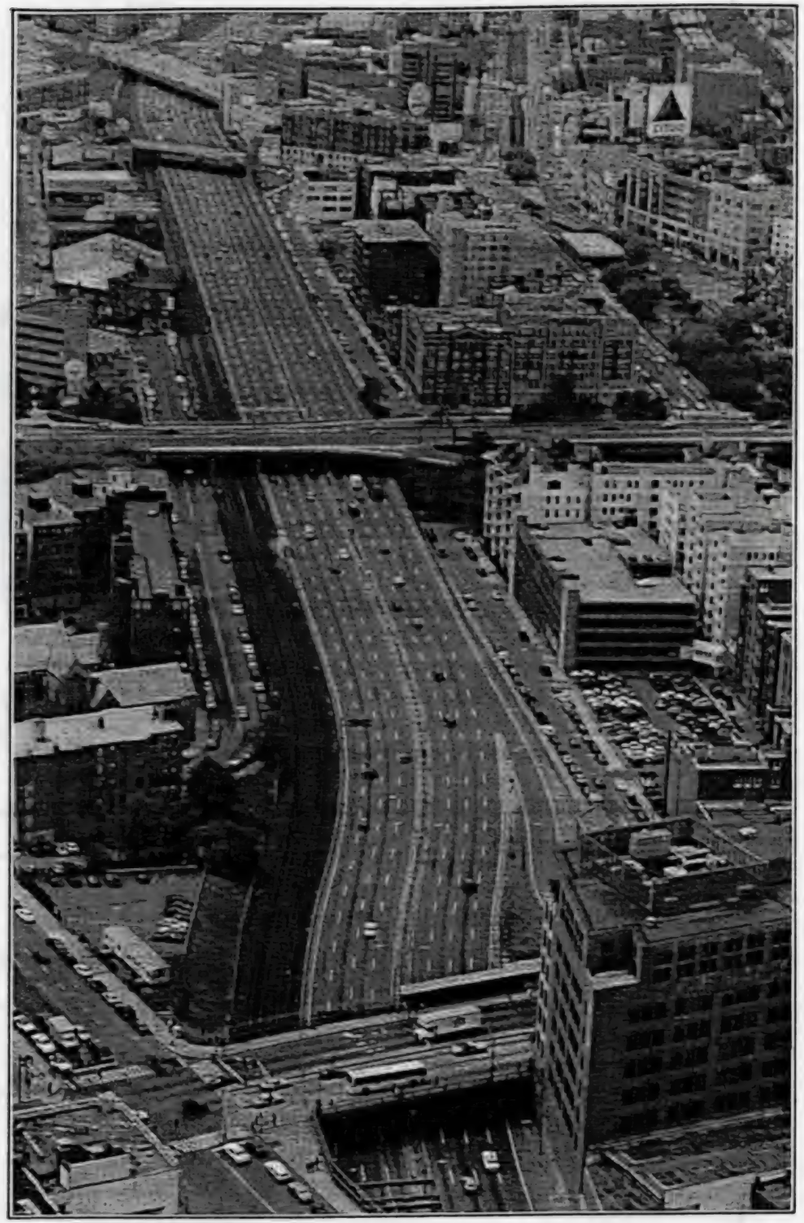
CONTEXT

The Somerset Hotel occupies the Charlesgate-Newbury Street corner, but on-grade and multilevel parking dominates the remainder of the Newbury Street frontage. The existing Massachusetts Avenue on-ramp and a Green Line tunnel vent stack occupy a thin strip between Newbury Street and the turnpike. The historic Fenway Studios Building and a Franciscan Church are located on the south side of Ipswich Street.

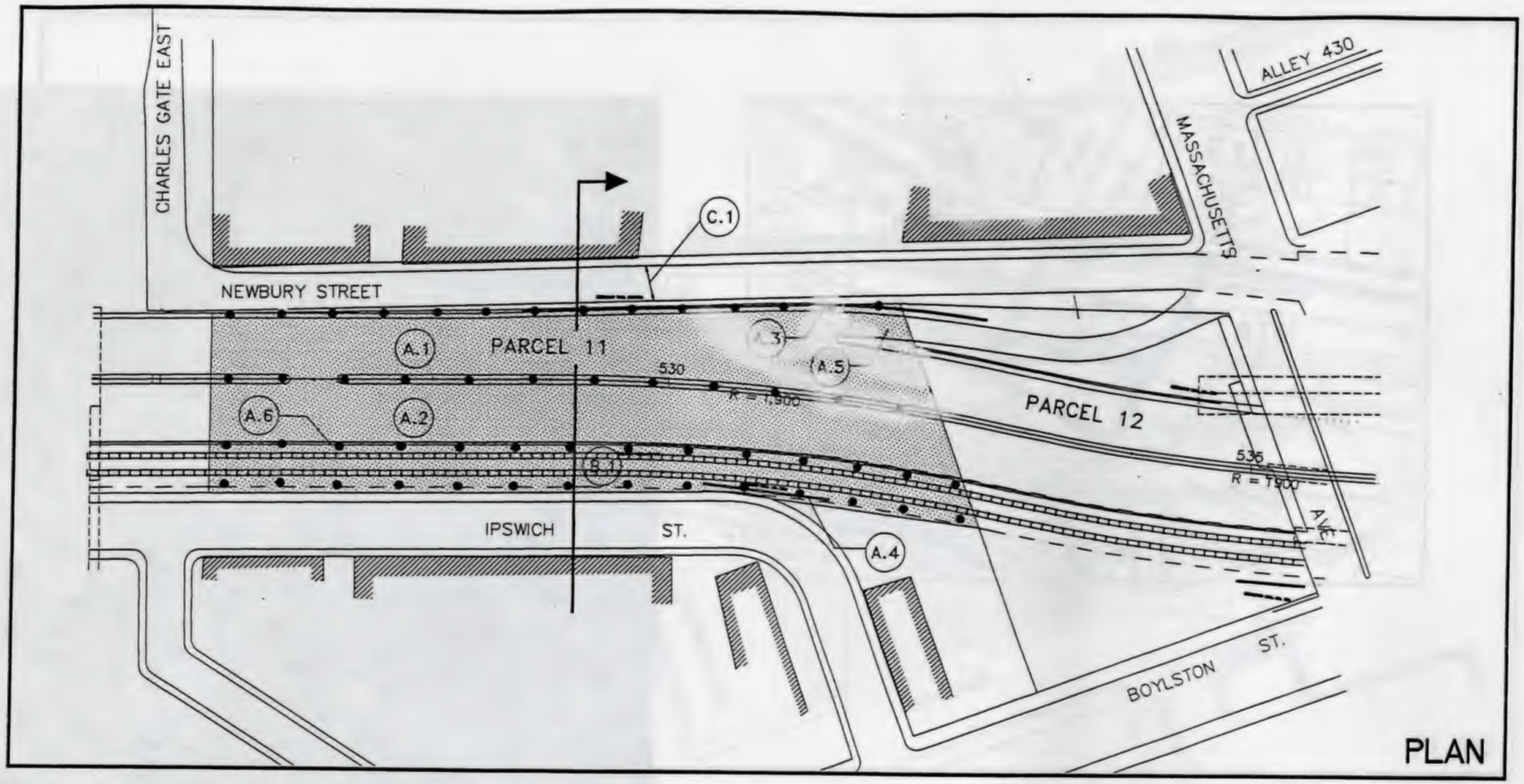
CONSTRAINTS / OPPORTUNITIES

The development potential of this parcel is severely restricted by the significant grade separation between adjacent streets and the platform that would result from air rights construction in this location. The studio artists have indicated their concern about any development that might block northern light from their building.

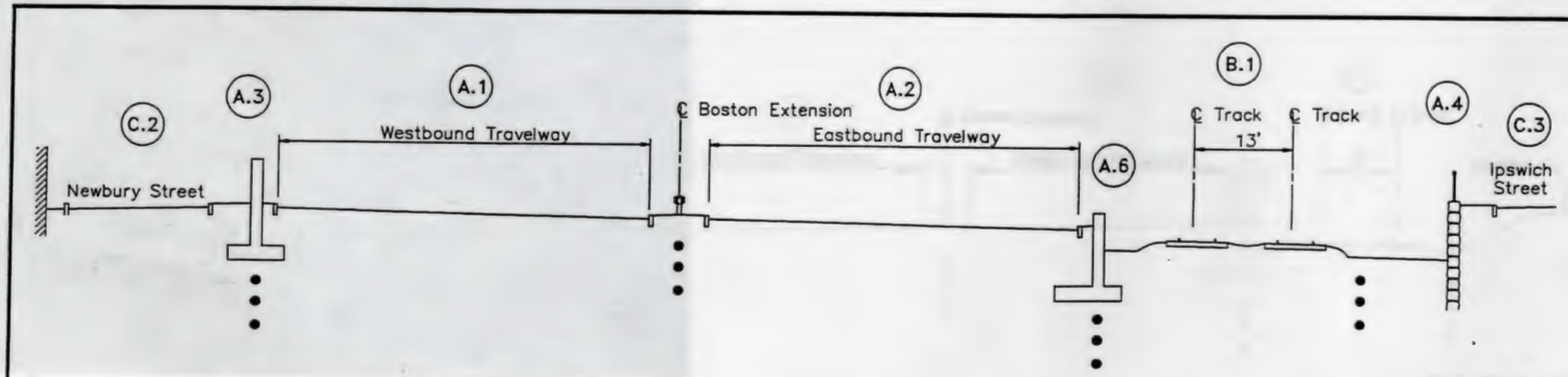




Massachusetts Avenue to Beacon Street



PLAN



SECTION

ENGINEERING EVALUATION
PARCEL 11

I. Physical Properties

A. Location–Between the Bowker Overpass and Massachusetts Ave. in Boston

B. Access
1. North–Newbury Street
2. South–Ipswich St./Abutting Property
3. East–Parcel 12
4. West–Parcel 10

II. Existing Facilities (See plan and section for location)

A. MTA
1. Mainline Westbound 4–12' travel lanes
2. Mainline Eastbound 4–12' travel lanes
3. North retaining wall
4. South retaining wall
5. Massachusetts Avenue WB on ramp
6. Parapet Wall

B. Conrail
1. Inbound & Outbound track

C. Others
1. MBTA Green Line tunnel

III. Potential Utility Service Connections

A. Electric–Newbury St./Ipswich St.
B. Gas–Newbury Street
C. Steam–Newbury Street
D. Telephone–Newbury St./Ipswich St.
E. Water–Newbury St./Ipswich St.
F. Sanitary Sewer–Newbury St./Ipswich St.
G. Storm Drain–Newbury St./Ipswich St.

IV. Future Facilities with Potential Impact on Development

A. Closure of WB On Ramp
1. Massachusetts Ave.
2. Revision to Mainline Adjustment
3. Revision to B on Ramp–Mass. Ave.

B. Others
None

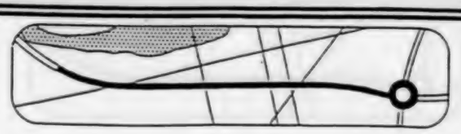
LEGEND

A.1 Existing Ficility

Section

Layout/Property Line

Potential Support Location



URBAN DESIGN

PARCEL 12

Study Area ..... Massachusetts Avenue
Location ..... Ipswich Apartments to Massachusetts Avenue
Access ..... Massachusetts Avenue, Boylston Street
Constructability: ..... B

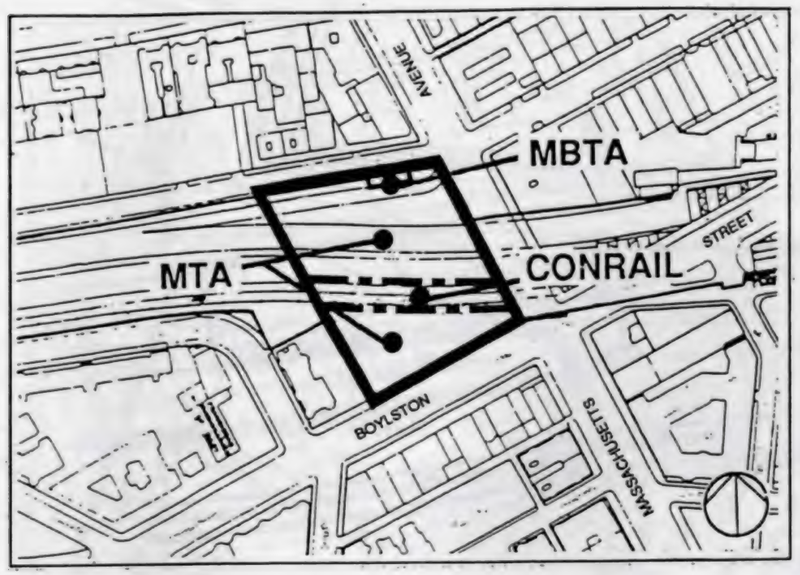
Size:
MTA ..... 67,120 sq. ft.
Conrail 11,360
MBTA 156
Total Area 78,636

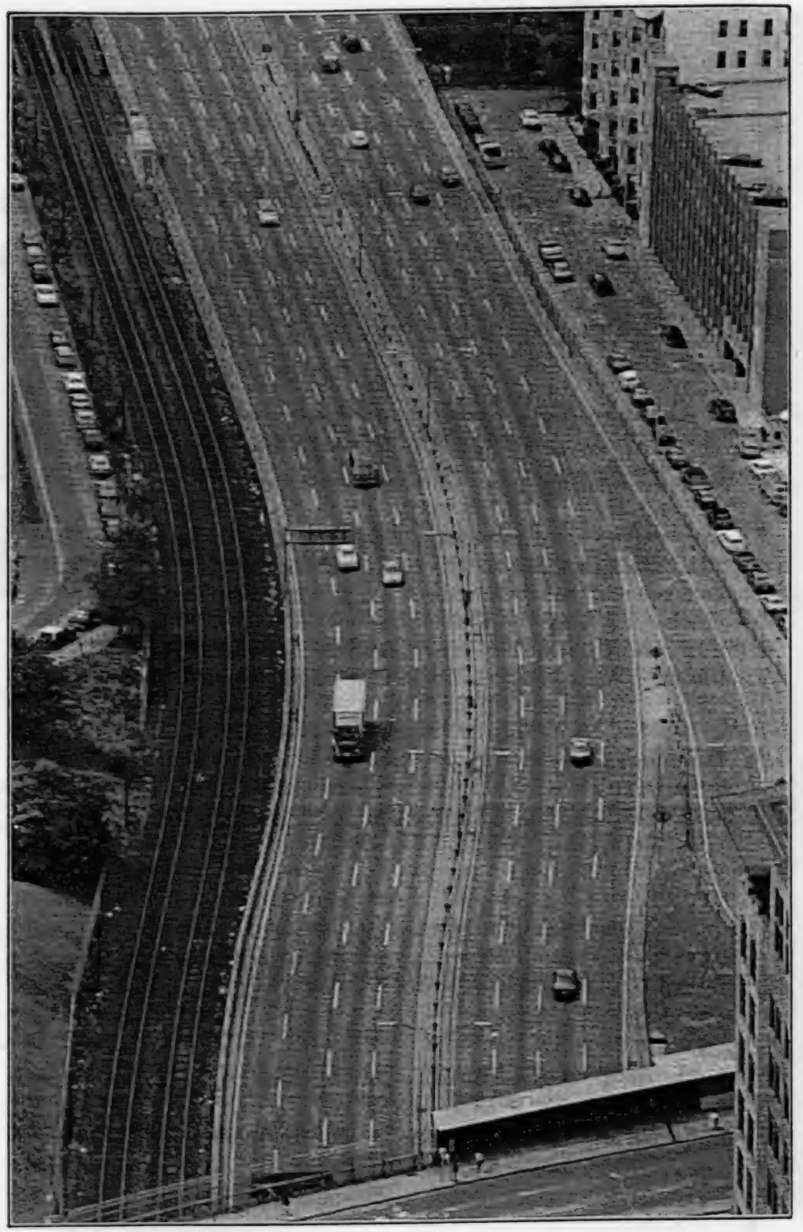
CONTEXT

The parcel includes the Newbury Street on-ramp to the MassPike. A four-story commercial building is across Newbury Street, and a five-story apartment complex is adjacent to its southwest corner. Directly across Massachusetts Avenue is the ten-story Tower Records building, a landmark for eastbound motorists, which contains the Auditorium Transit Station in its base.

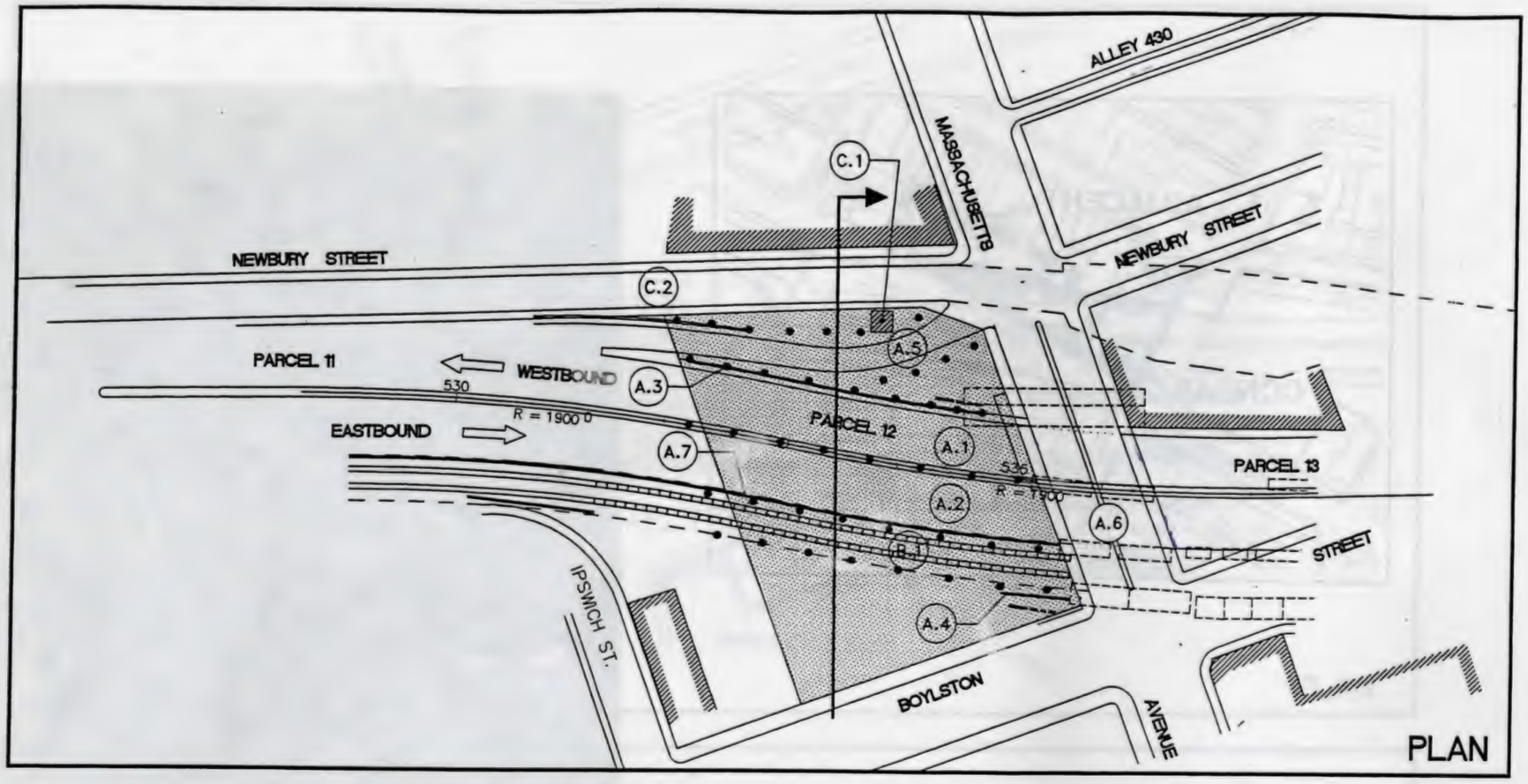
CONSTRAINTS / OPPORTUNITIES

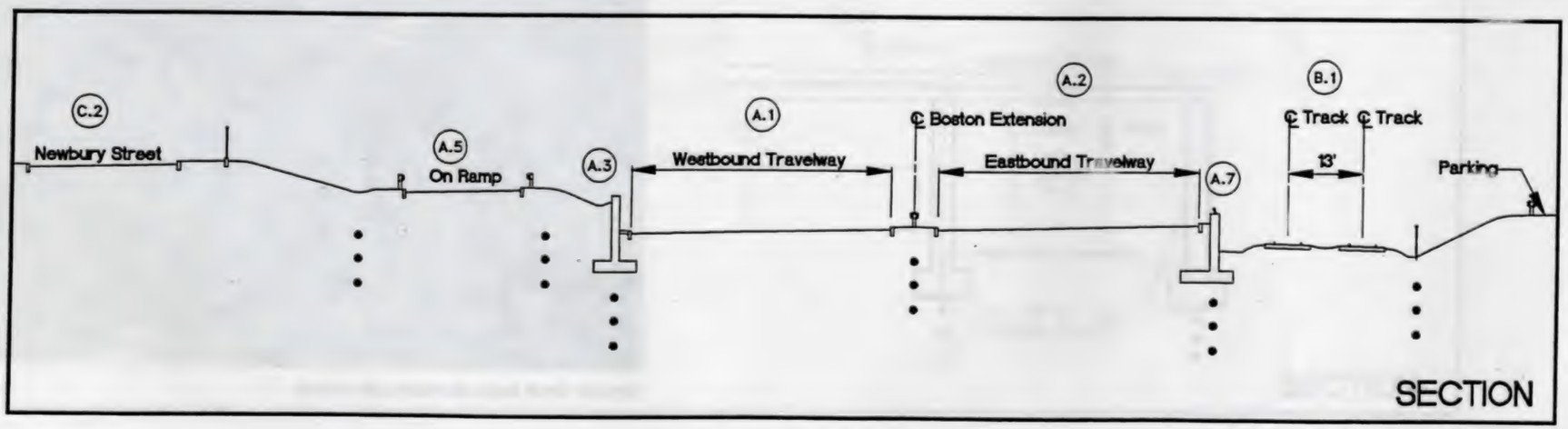
The City of Boston Zoning Code allows a height of 155 feet on this parcel in contrast to the 120-foot Boylston Street zone to the east. The parcel's height allowance together with its 300 foot Massachusetts Avenue frontage gives it a high development potential. With a busy local bus stop and the Green Line transit station across the street, it has excellent public access. On-site parking could be accessed from Boylston Street and might have limited egress to the turnpike on the existing ramp. The size of the parcel could be increased by incorporating a portion of Parcel 11 and closing the Newbury Street on-ramp.





Massachusetts Avenue to Bowker Overpass





ENGINEERING EVALUATION
PARCEL 12

I. Physical Properties

A. Location—West of Massachusetts Avenue in Boston

B. Access
1. North—Newbury Street
2. South—Abutting Property
3. East—Massachusetts Avenue
4. West—Parcel 11

II. Existing Facilities
(See plan and section for location)

A. MTA
1. Mainline Westbound 4—12' travel lanes
2. Mainline Eastbound 4—12' travel lanes
3. North retaining wall, 4'—20'± high
4. South retaining wall
5. Massachusetts Avenue WB on Ramp
6. Massachusetts Avenue bridge
7. Parapet Wall

B. Conrail
1. Inbound & Outbound tracks

C. Others
1. MBTA Greenline ventilation facility
2. MBTA Greenline Tunnel

III. Potential Utility Service Connections

A. Electric—Newbury St./Mass. Ave./Boylston St.
B. Gas—Mass. Ave./Boylston St./Newbury St.
C. Steam—Newbury St./Mass. Ave./Boylston St.
D. Telephone—Newbury St./Boylston St.
E. Water—Newbury St./Mass. Ave./Boylston St.
F. Sanitary Sewer—Newbury St./Boylston St.
G. Storm Drain—Newbury St./Boylston St.

IV. Future Facilities
(With Potential Impact on Development)

A. MTA
1. Closure of WB on Ramp—Massachusetts Ave.
2. Upgrade of Mainline Alignment
3. Upgrade of WB on Ramp—Mass. Ave.

B. Others
None

LEGEND

(A.1) Existing Ficility

Section

Layout/Property Line

Potential Support Location

URBAN DESIGN

PARCEL 13

Study Area ..... Massachusetts Avenue
Location ..... Corner of Massachusetts Avenue and Boylston Street
Access ..... Massachusetts Avenue, Boylston Street
Constructability C

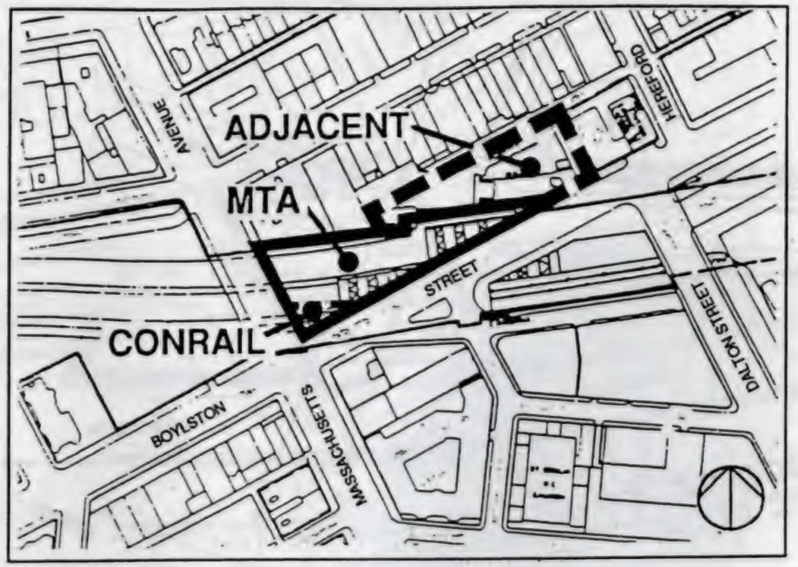
Size:
MTA ..... 25,513 sq. ft.
Conrail 392
Parcel Size 25,905
Adjacent Parcel 28,200
Total Area 54,105

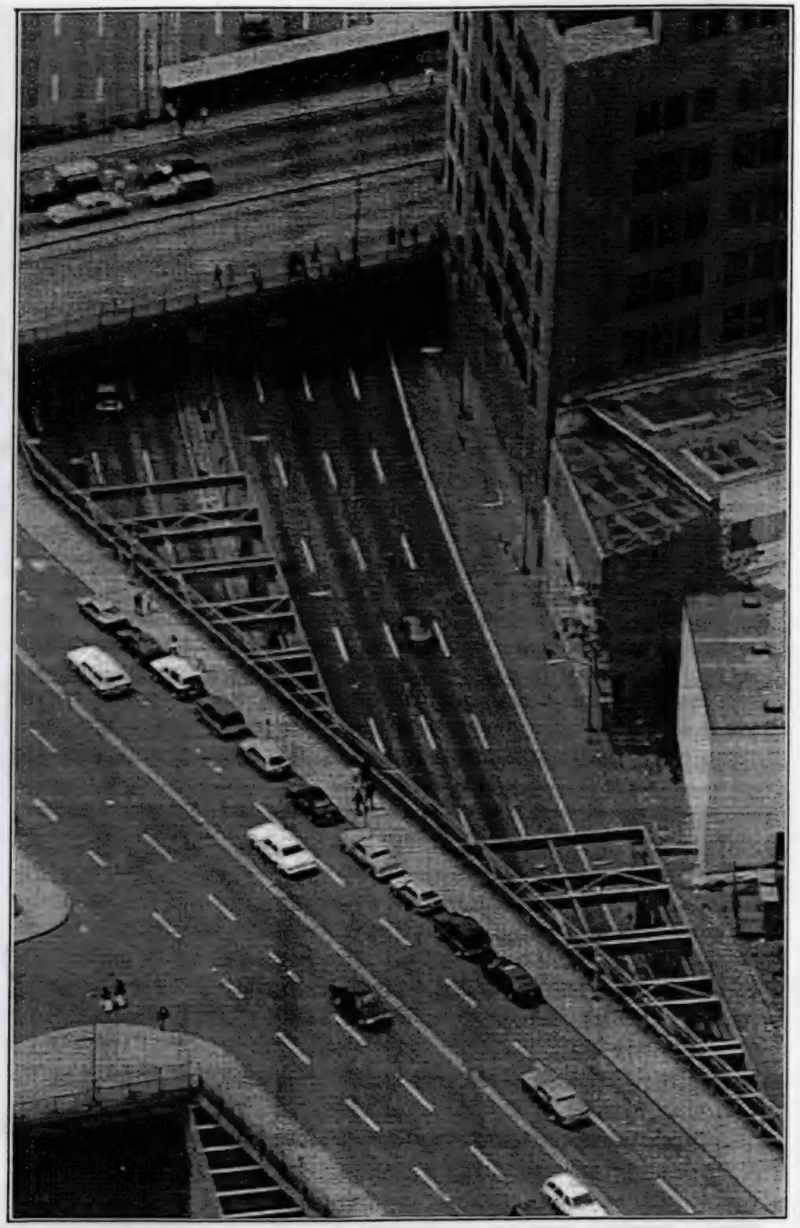
CONTEXT

Parcel 13 is located between the Tower Record building and the corner of Boylston Street and Massachusetts Avenue. The adjacent parcel includes the Auditorium Transit Station exit to Boylston Street. The Institute of Contemporary Art (ICA), Berklee College, and other nearby institutions make this a lively center for the arts and a strong commercial area.

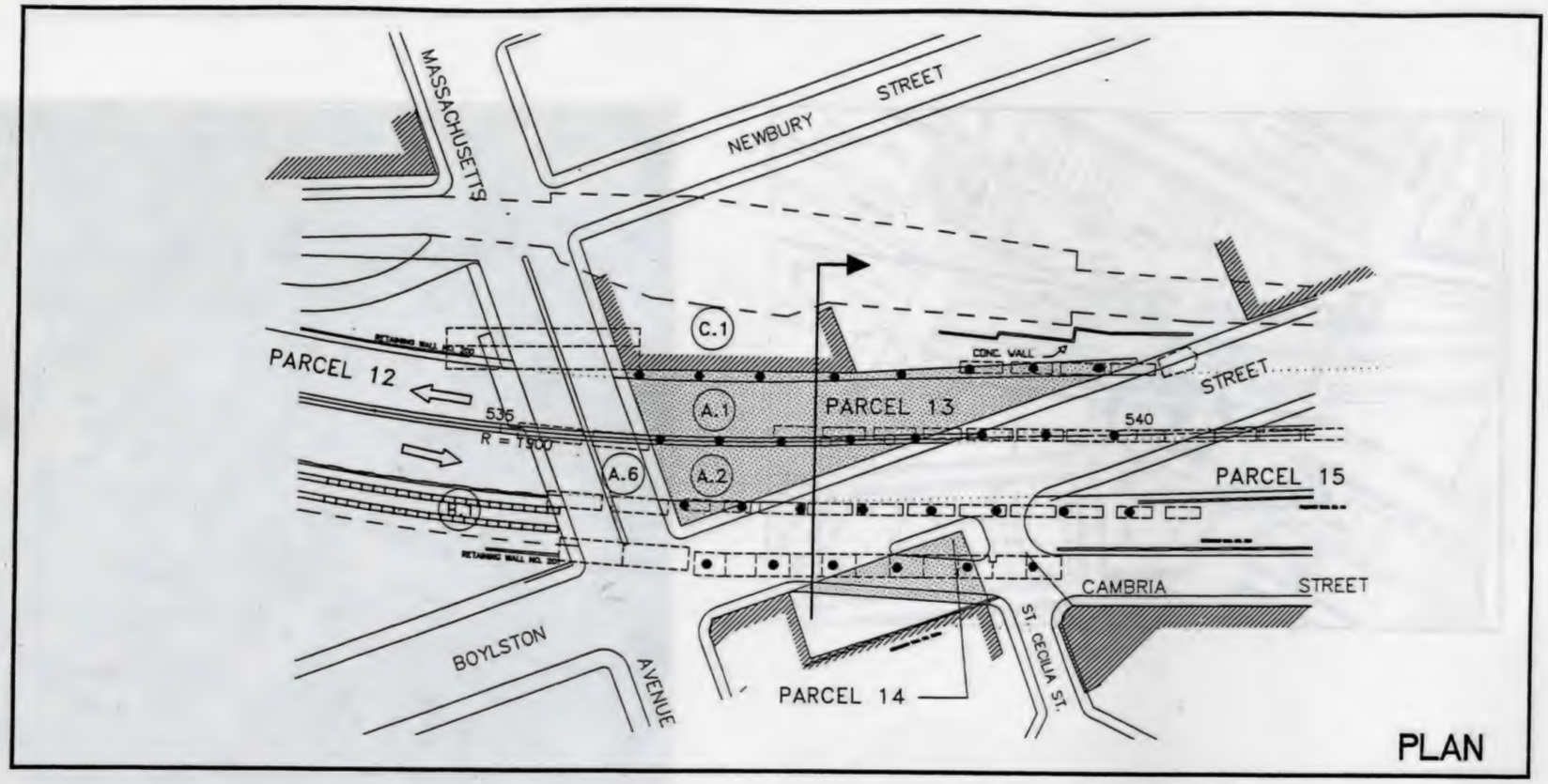
OPPORTUNITIES/CONSTRAINTS

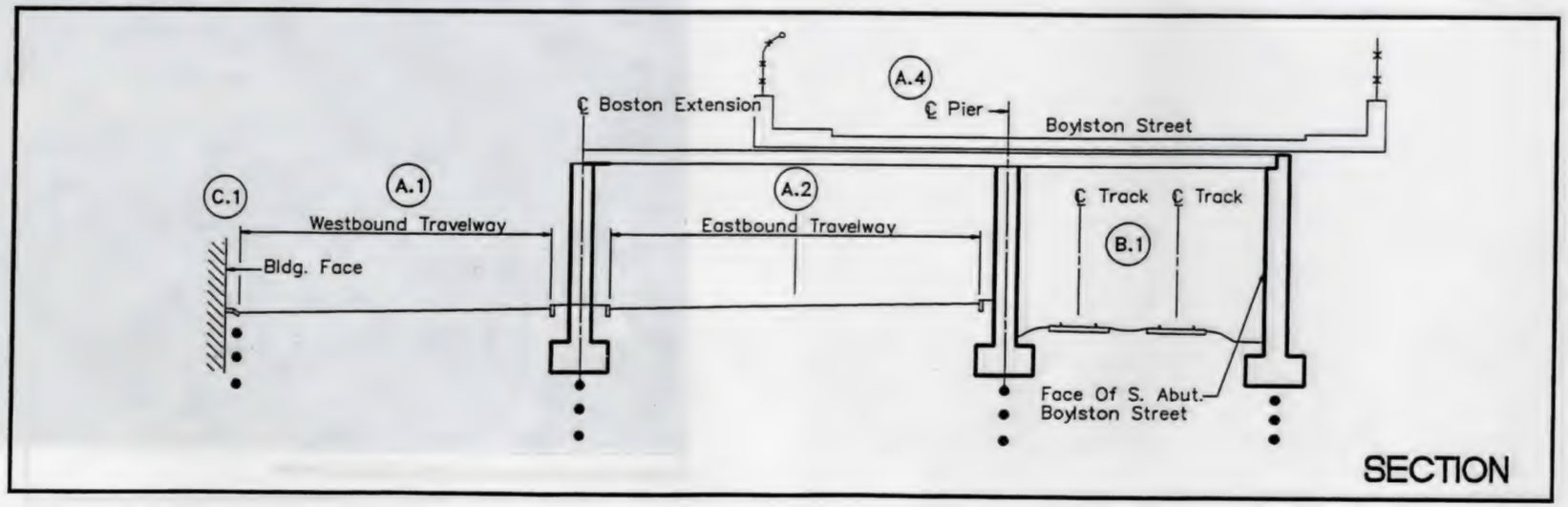
The oblique angle of the Boylston Street bridge with the turnpike axis makes construction difficult. Development of the site would complete a missing street edge and help to define an important urban place. Development of this parcel could incorporate adjacent parcels such as the Tower Record building and/or the ICA.





Boylston Street toward Massachusetts Avenue





ENGINEERING EVALUATION
PARCEL 13

I. Physical Properties

A. Location–Between Massachusetts Ave. and Boylston Street in Boston

B. Access
1. North–Abutting Property
2. South–Boylston Street
3. East–Boylston Street
4. West–Massachusetts Avenue

II. Existing Facilities (See plan and section for location)

A. MTA
1. Mainline Westbound 4–12' travel lanes
2. Mainline Eastbound 4–12' travel lanes
3. Massachusetts Avenue bridge
4. Boylston Street Bridge

B. Conrail
1. Inbound & Outbound track

C. Others
1. Abutting Building
2. MBTA Green Line Auditorium Station
3. MBTA Green Line Tunnel
4. MBTA Green Line ventilation facility

III. Potential Utility Service Connections

A. Electric–Massachusetss Ave./Boylston St.
B. Gas–Massachusetts Ave./Boylston St.
C. Steam–Massachusetts Ave./Boylston St.
D. Telephone–Boylston St.
E. Water–Massachusetts Ave.
F. Sanitary Sewer–Boylston St.
G. Storm Drain–Boylston St.

IV. Future Facilities with Potential Impact on Development

None Identified

LEGEND

(A.1) Existing Ficility

Section

Layout/Property Line

Potential Support Location

URBAN DESIGN

PARCEL 14

Study Area ..... Massachusetts Avenue
Location ..... Corner of Boylston Street and St. Cecelia Street
Access ..... Boylston Street, Berklee College
Constructability C

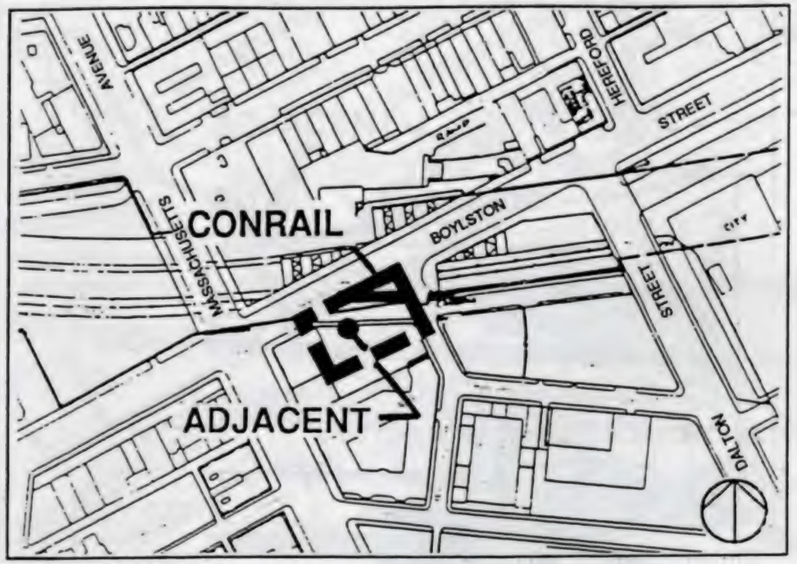
Size:
Conrail ..... 458 sq. ft.
Cambria Street 4,280
Adjacent Parcel 4,442
Total Area 9,180

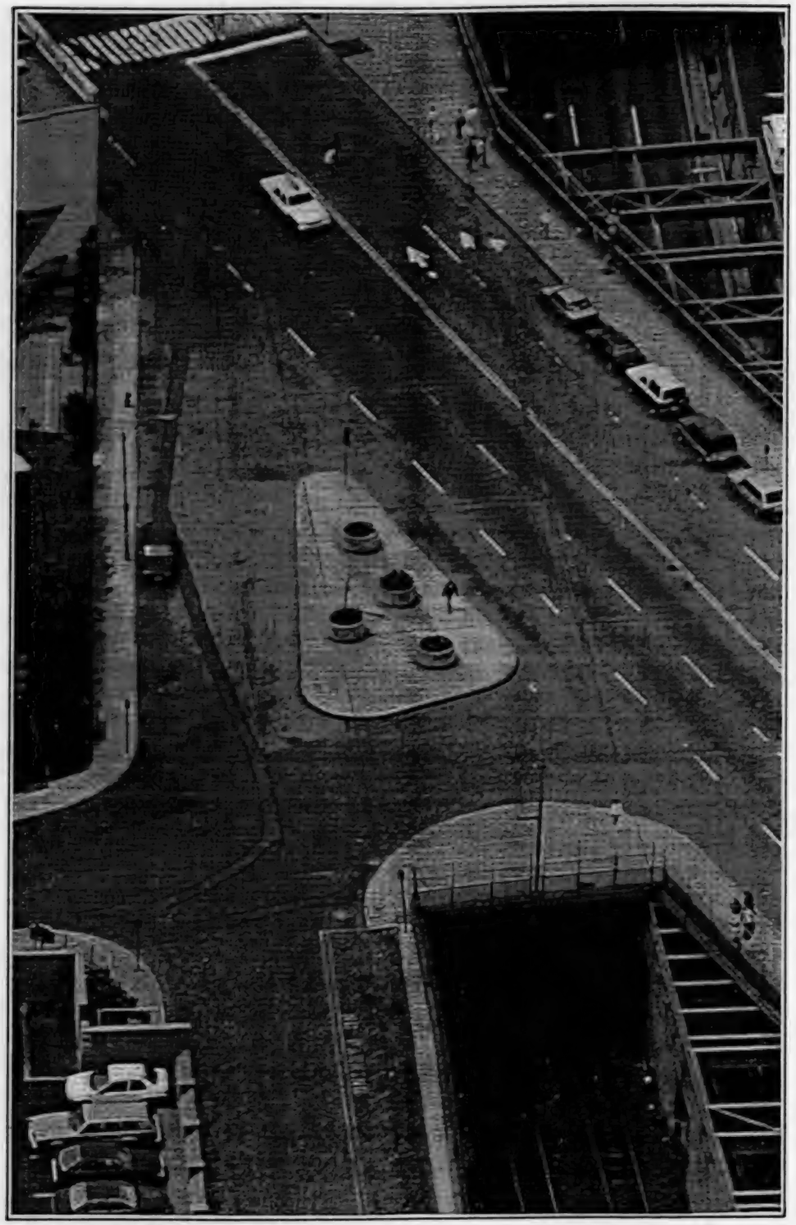
CONTEXT

This parcel is a residual fragment at the intersection of three streets. To its south is an undeveloped triangular parcel adjacent to Berklee College. The triangle is too small and isolated for development, but by closing Cambria Street and combining it with the adjacent Berklee parcel, a buildable site could be created.

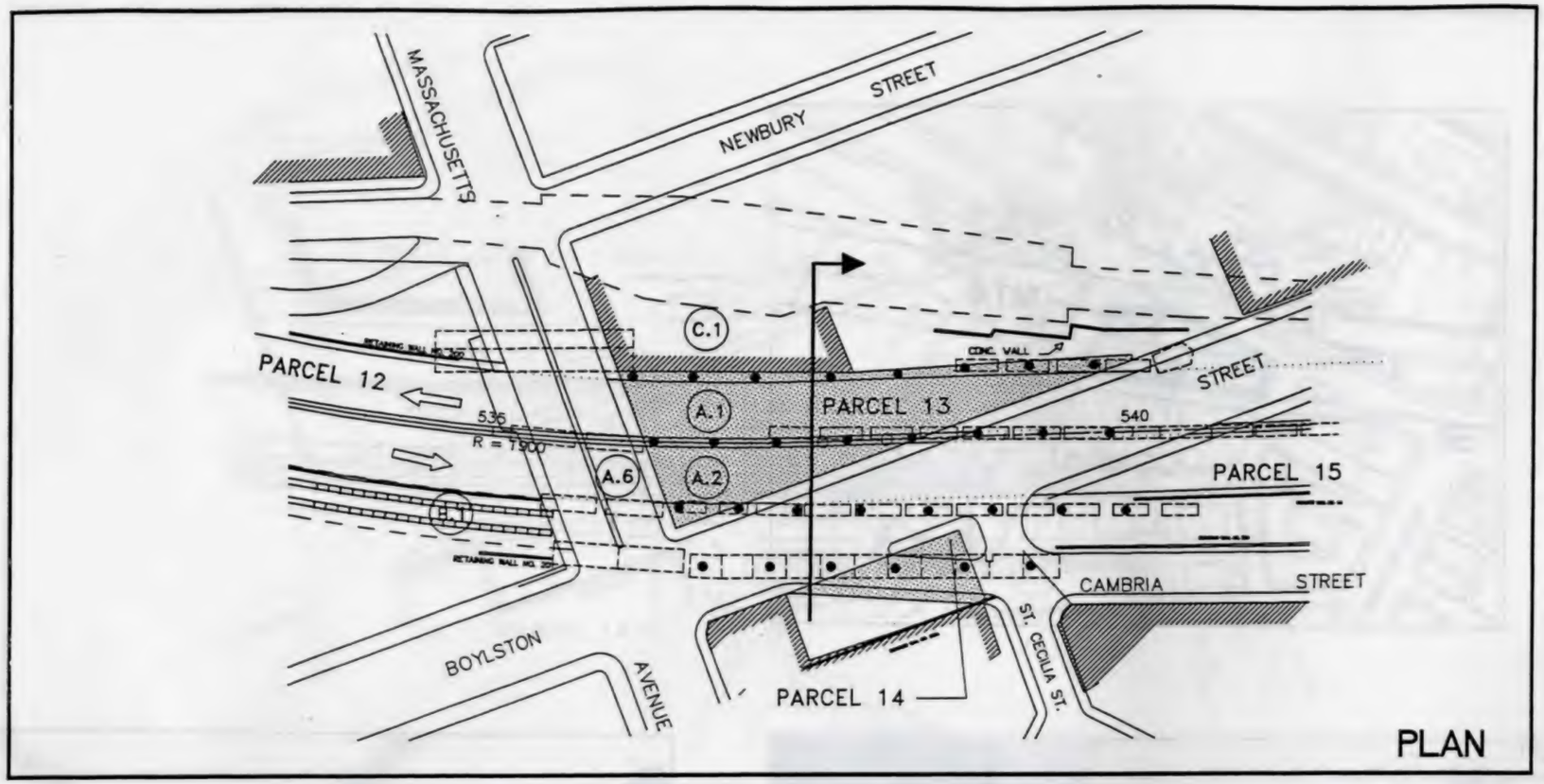
CONSTRAINTS / OPPORTUNITIES

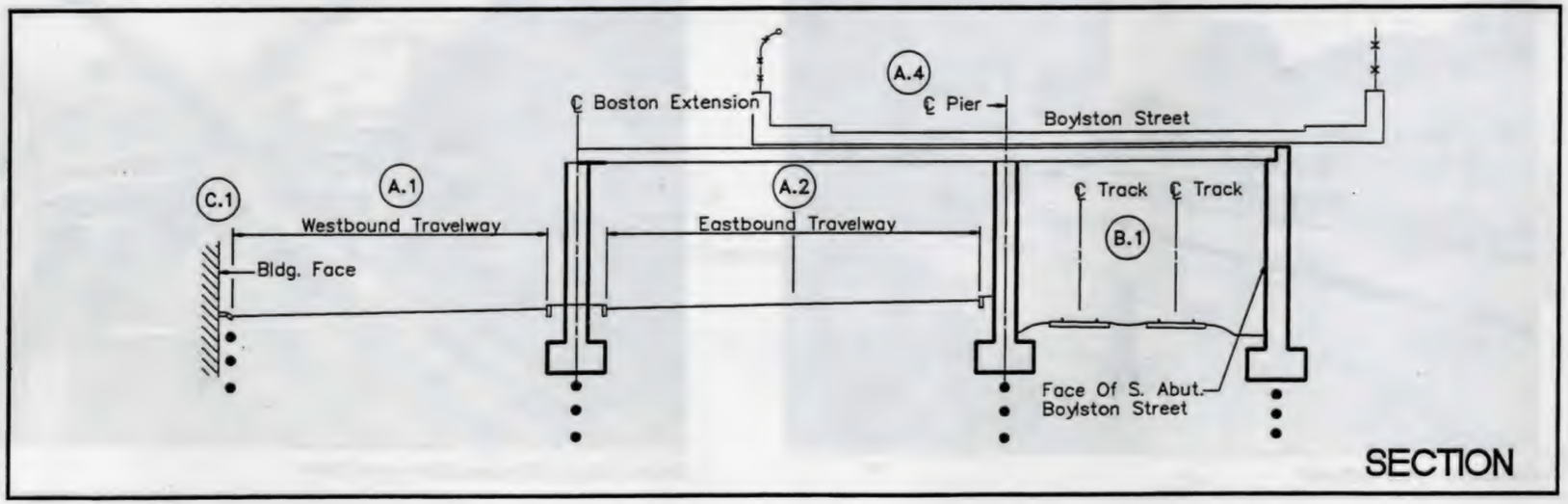
Cambria Street is a service road for Hynes Auditorium at the corner of Boylston and Dalton Streets, but the section west of St. Cecelia Street is unnecessary for that purpose. Street closure would provide an area for Berklee College expansion, mend a fragmented piece of urban fabric, and restore a pedestrian route on the southern edge of Boylston Street. While site geometry is complex, development might be feasible if done in conjunction with the reconstruction of the Boylston Street bridge, as recommended in the Engineering Study.





Boylston Street Bridge with Cambria Street to the left





ENGINEERING EVALUATION
PARCEL 14

I. Physical Properties

A. Location—Westerly corner of Boylston St./ St. Cecilia Street in Boston

B. Access
1. North—Boylston Street
2. South—Cambria Street
3. East—St. Cecelia Street
4. West—Boylston Street

II. Existing Facilities
(See plan and section for location)

A. MTA
1. Mainline Westbound 4—12' travel lanes
2. Mainline Eastbound 4—12' travel lanes
3. Boylston Street Bridge

B. Conrail
1. Inbound & Outbound track

C. Others
1. Adjacent building
2. Adjacent public way—Cambridge Street
3. Adjacent public way—St. Cecilia Street

III. Potential Utility Service Connections

A. Electric—Boylston Street
B. Gas—Cambria Street
C. Steam—Cambria Street
D. Telephone—Cambria Street
E. Water—Cambria Street
F. Sanitary Sewer—St. Cecilia Street
G. Storm Drain—St.Cecilia Street

IV. Future Facilities with Potential Impact on Development

None Identified

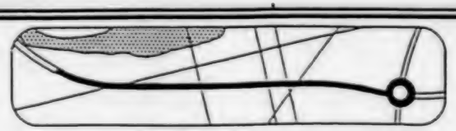
LEGEND

(A.1) Existing Ficility

Section

Layout/Property Line

Potential Support Location



URBAN DESIGN

PARCEL 15

Study Area ..... Massachusetts Avenue
Location ..... Corner of Boylston Street and Dalton Street
Access ..... Boylston Street, Dalton Street
Constructability C

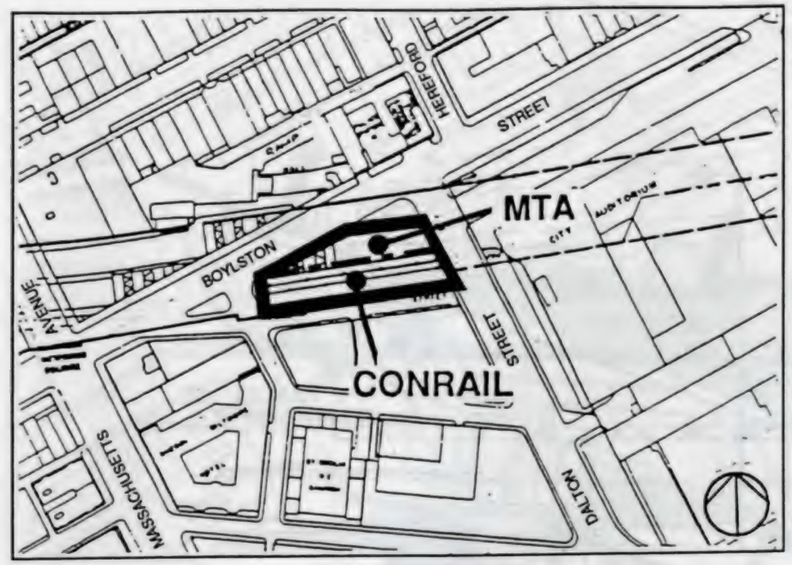
Size:
Prudential ..... 11,173 sq. ft.
Conrail 12,686
Cambria Street: 12,000
Total Area 35,859

CONTEXT

Parcel 15 is a major piece of the fragmented pattern south of Boylston Street. Its air rights were transferred to private ownership during the site assembly of the Prudential Center, which makes this piece unique among the undeveloped air rights parcels. The Cheri Theater complex and parking structure are across Cambria Street to the south, and the Hynes Auditorium is across Dalton Street to the east.

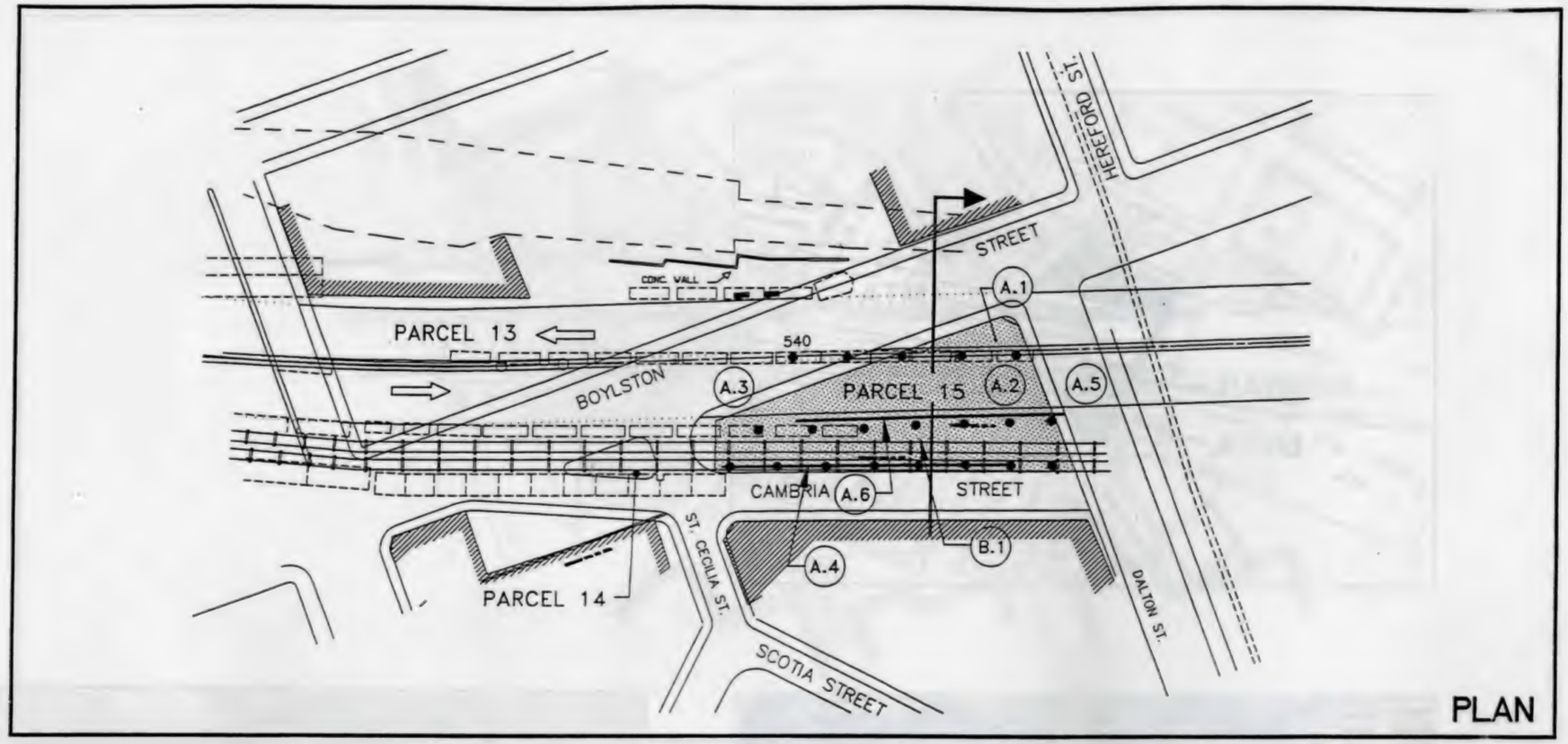
CONSTRAINTS / OPPORTUNITIES

This parcel presents an opportunity for parking or institutional uses. A parking structure might bridge the Cambria Street service access on air rights to connect with the existing Cheri Theater parking ramp. Interest in the parcel has also been expressed by Hynes Auditorium to fulfill a variety of expansion needs.

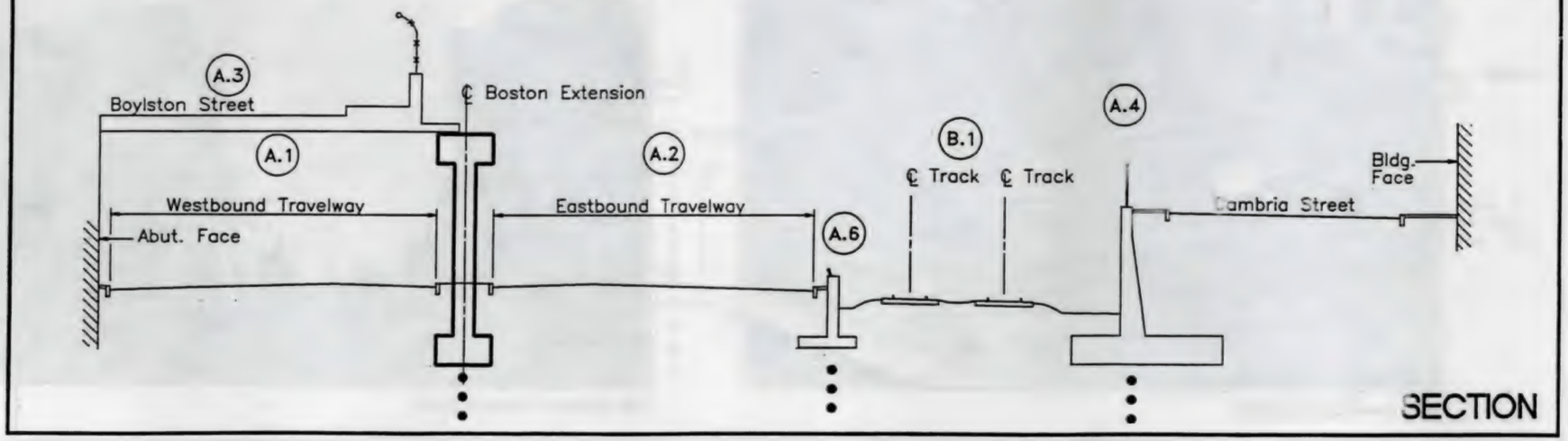


East toward Hynes Auditorium

Berklee College at Massachusetts Avenue Corner



PLAN



SECTION

ENGINEERING EVALUATION
PARCEL 15

I. Physical Properties

A. Location—Between Boylston Street and Dalton Street in Boston

B. Access
1. North—Boylston Street
2. South—Cambria Street
3. East—Dalton Street
4. West—St. Cecilia Street

II. Existing Facilities
(See plan and section for location)

A. MTA
1. Mainline Westbound 4—12' travel lanes
2. Mainline Eastbound 4—12' travel lanes
3. Boylston Street bridge
4. South retaining wall
5. Dalton Street bridge
6. Parapet Wall

B. Conrail
1. Inbound & Outbound track

C. Others
None

III. Potential Utility Service Connections

A. Electric—Boylston St./Dalton St./ Cambria Street
B. Gas—Dalton St.
C. Steam—Cambria St./St. Cecelia Street
D. Telephone—St. Cecilia St.
E. Water—Dalton Street
F. Sanitary Sewer—Dalton Street
G. Storm Drain—Dalton Street

IV. Future Facilities with Potential Impact on Development

A. MTA
None

B. Others
None

LEGEND

A.1 Existing Ficility

Section

Layout/Property Line

Potential Support Location

URBAN DESIGN

PARCEL 16

Study Area ..... Bay Village/Chinatown
Location ..... Corner of Clarendon Street and Columbus Avenue
Access ..... Clarendon Street, Columbus Avenue, Cahners Street
Constructability C

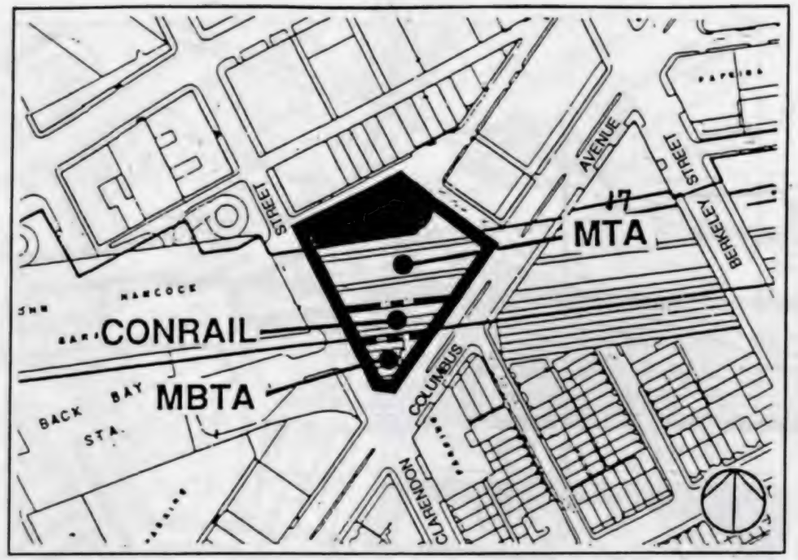
Size:
MTA ..... 37,312 sq. ft.
Conrail 6,332
MBTA 3,762
Parcel Size 47,406

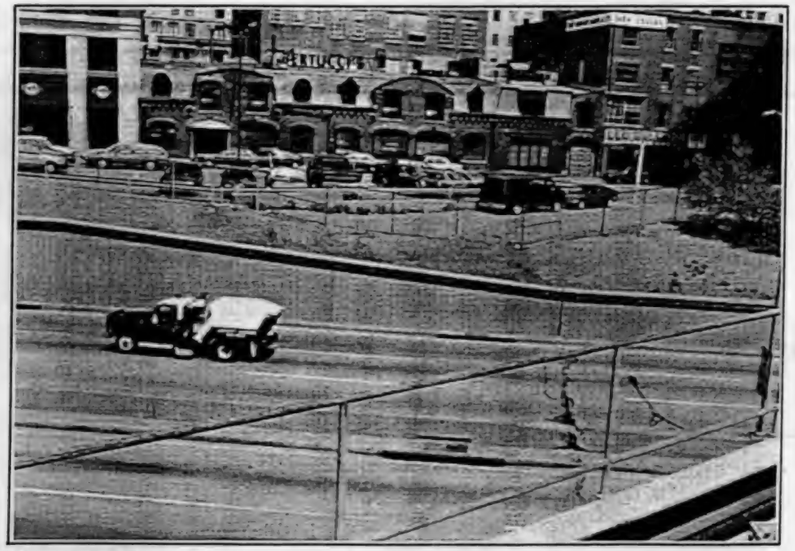
CONTEXT

This is a prominent, pentagonal site across Clarendon Street from Back Bay Station and the John Hancock garage. Cahners Street frontage could offer convenient vehicular access.

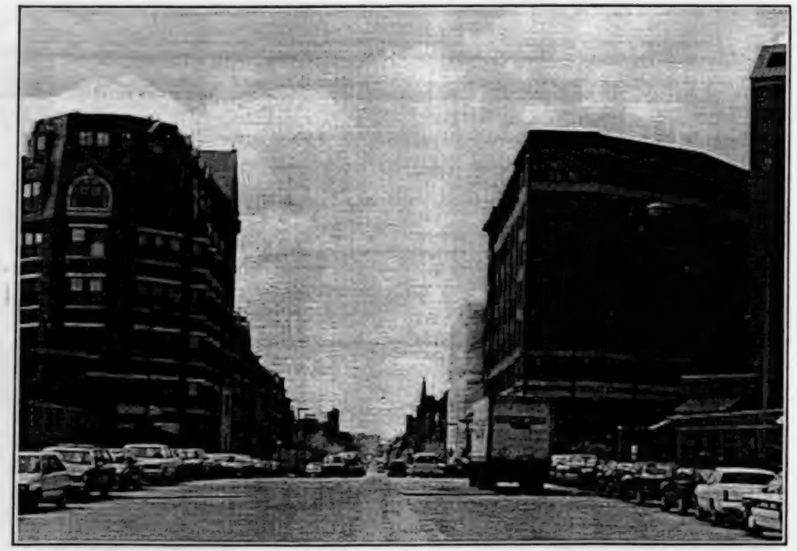
CONSTRAINTS / OPPORTUNITIES

This parcel's irregular shape increases potential construction costs. The central portion of the parcel's acutely angled corner might be most effectively left as open space. Because of its proximity to Back Bay Station, this parcel might be considered as a site for an intercity bus terminal. The feasibility of this use could be limited by the parcel's size and shape.

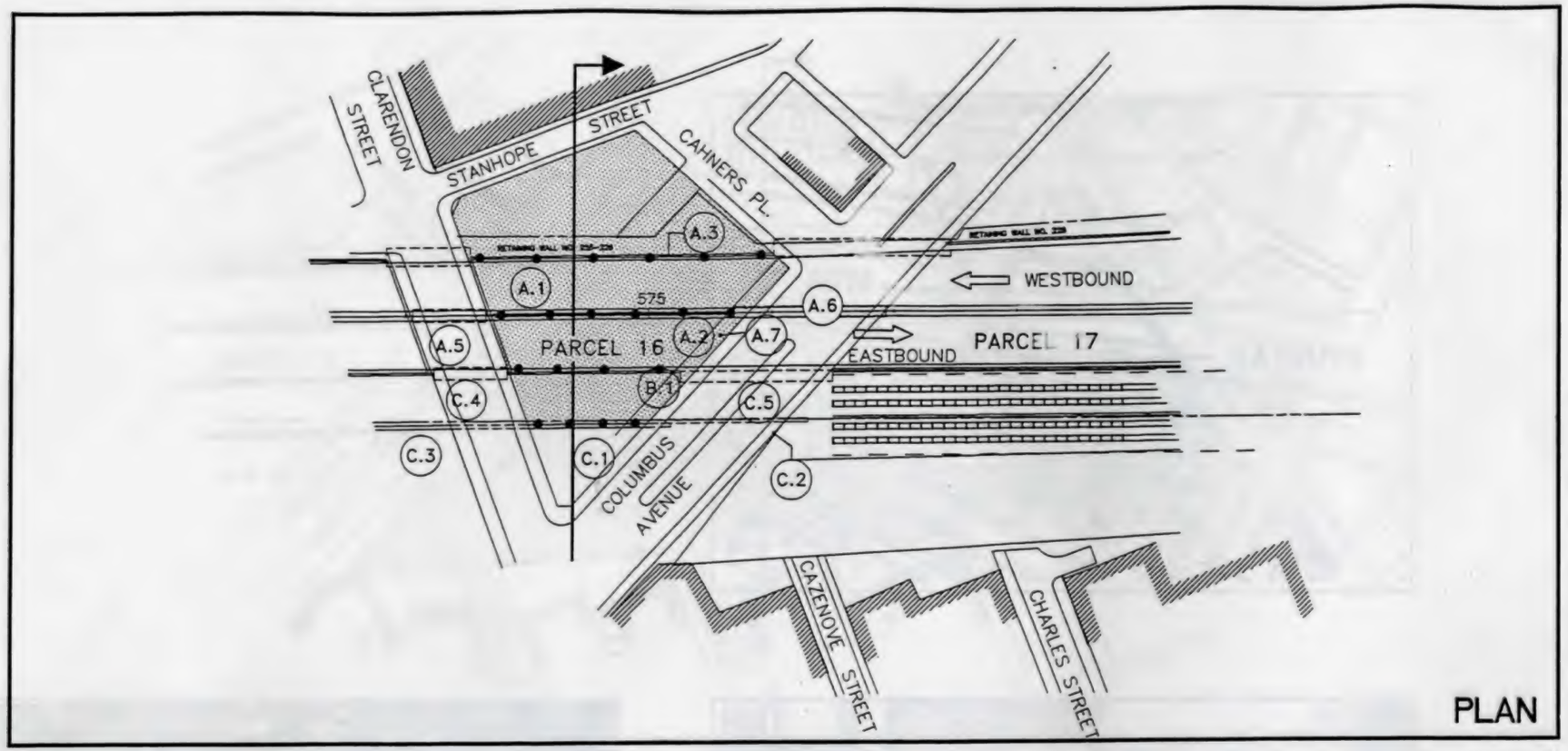


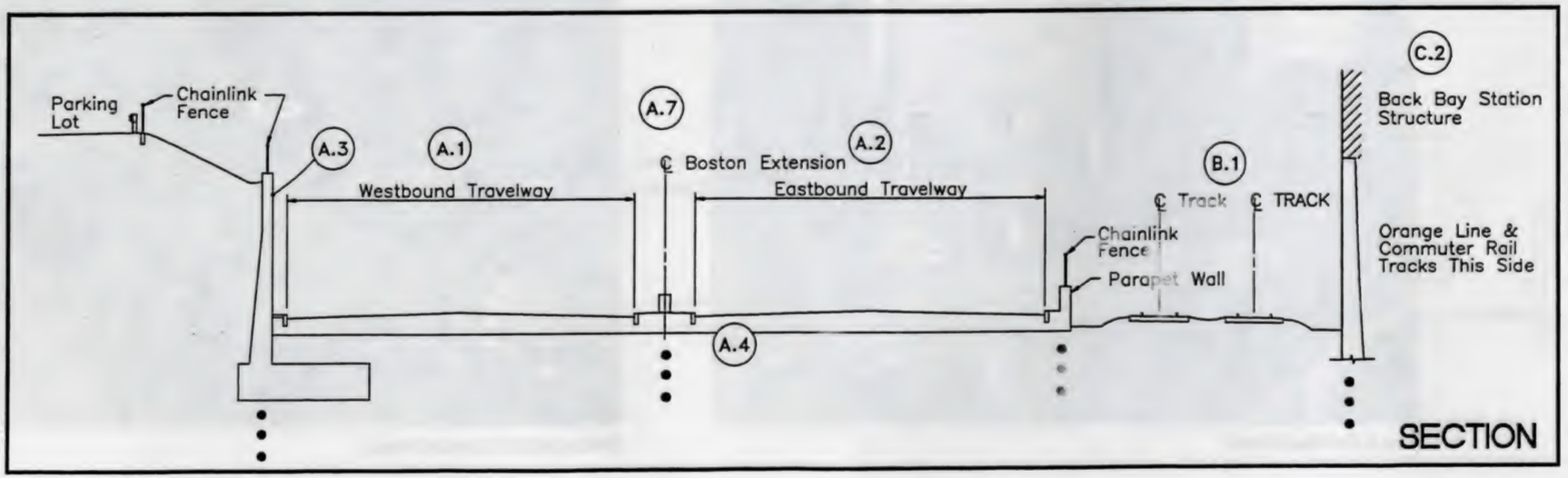


North toward Cahners Street



View South on Clarendon Street





ENGINEERING EVALUATION
PARCEL 16

I. Physical Properties

A. Location—Between Clarendon Street and Columbus Avenue in Boston

B. Access
1. North—Abutting Property
2. South—Clarendon St./Columbus Avenue
3. East—Columbus Avenue
4. West—Clarendon Street

II. Existing Facilities (See plan and section for location)

A. MTA
1. Mainline Westbound 3—12' travel lanes
2. Mainline Eastbound 3—12' travel lanes
3. North retaining wall, 6'—20'± high
4. Boat slab
5. Clarendon Street bridge
6. Columbus Avenue bridge
7. Utility bridge

B. Conrail
1. Inbound & Outbound track

C. Others
1. MBTA Orange Line Back Bay Station Exit
2. MBTA Orange Line track below
3. MBTA Amtrak Back Bay Station
4. Clarendon Street bridge
5. Columbus Avenue bridge

III. Potential Utility Service Connections

A. Electric—Clarendon St./Columbus Ave.
B. Gas—Columbus Ave./Stanhope St.
C. Steam—None
D. Telephone—Clarendon St./Columbus Ave.
E. Water—Stanhope St./Columbus Ave./ Morgan Street
F. Sanitary Sewer—Stanhope Street
G. Storm Drain—Stanhope Street

IV. Future Facilities with Potential Impact on Development

None Identified

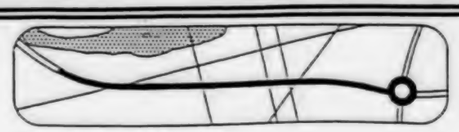
LEGEND

(A.1) Existing Facility

Section

Layout/Property Line

• • • Potential Support Location



URBAN DESIGN

PARCEL 17

Study Area: ..... Bay Village/Chinatown
Location: ..... Columbus Avenue to Berkeley Street
Access: ..... Columbus Avenue, Berkeley Street
Constructability: ..... B

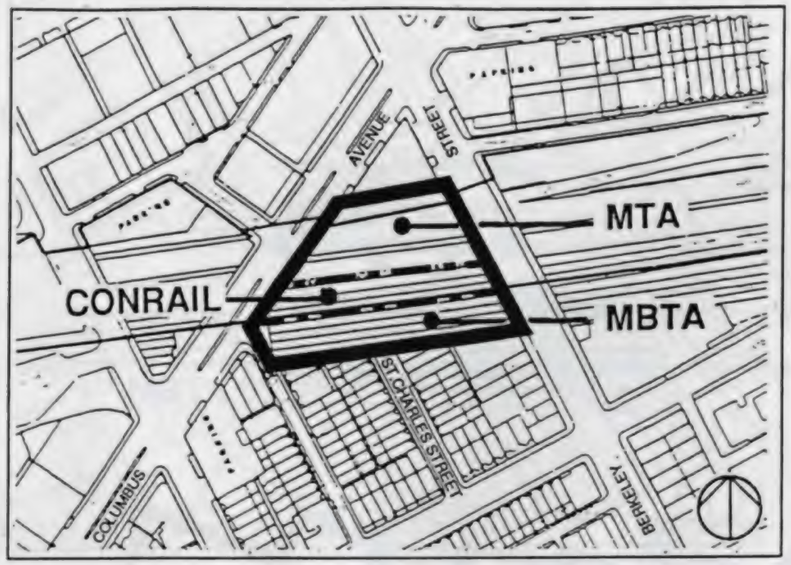
Size
MTA: 26,929
Conrail: 14,625
MBTA: 25,540
Parcel Size: 67,094

CONTEXT

This parcel occupies a prominent location at the intersection of Berkeley Street and Columbus Avenue. The adjacent triangular corner parcel, currently used for a rent-a-car operation, should be added to assure use compatibility. The Pledge of Allegiance Building, a bulky five-story office building is across Columbus Avenue. The parcel contains a vent tower and exit stair for the Back Bay Station.

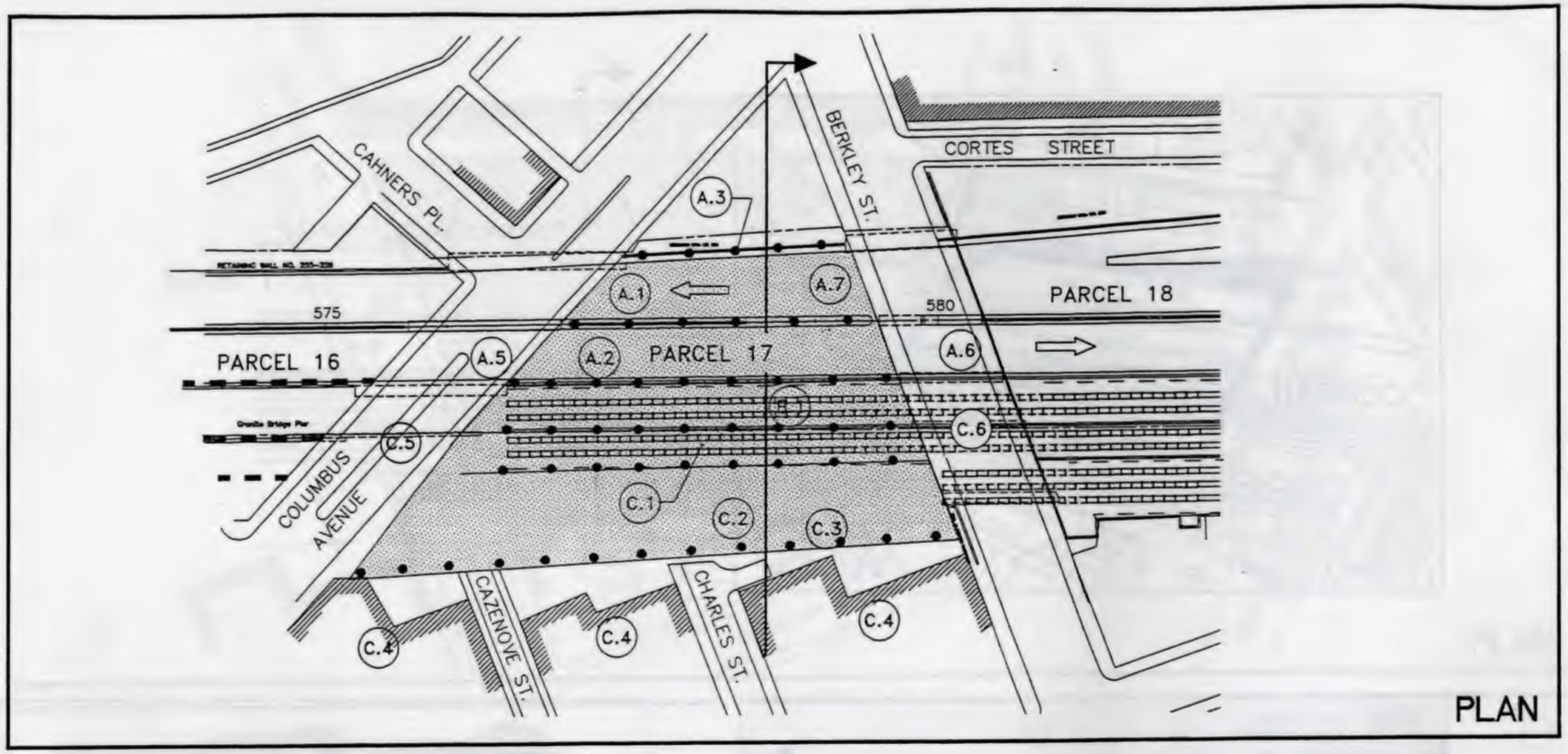
CONSTRAINTS / OPPORTUNITIES

The size and location of this parcel make it suitable for office or mixed use development. The southern edge could be considered for extension of the Southwest Corridor Park. This site's proximity to Back Bay Station could be used to the benefit of many development responses on this parcel.

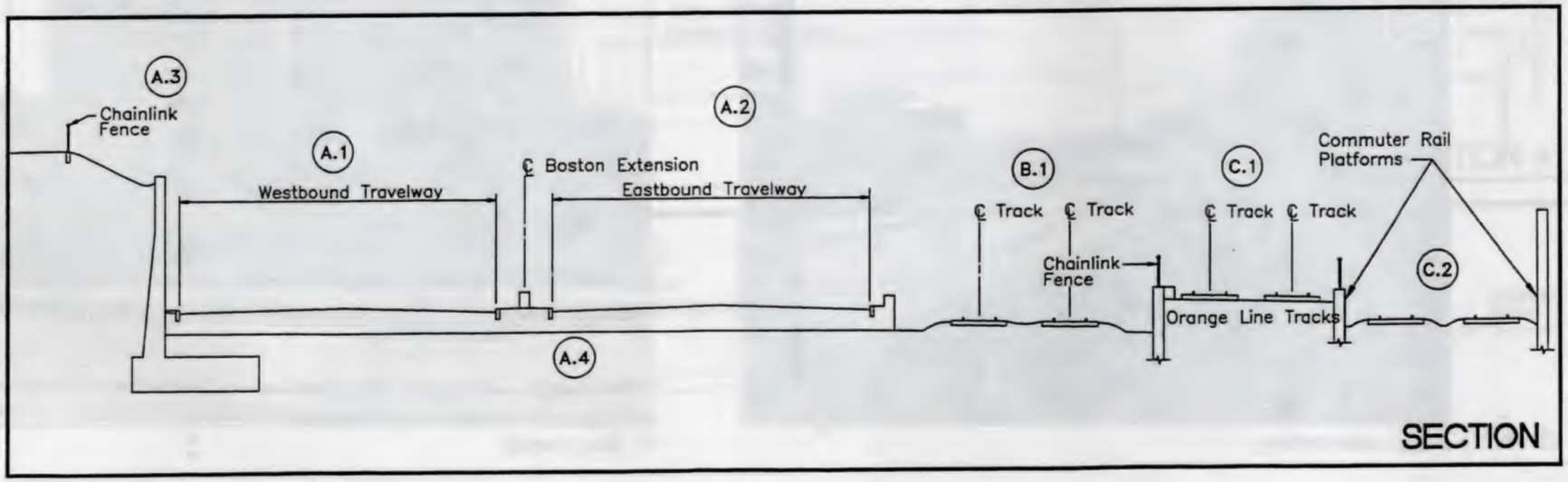


East to Columbus Avenue

Berkley Street to Columbus Avenue



PLAN



SECTION

ENGINEERING EVALUATION

PARCEL 17

I. Physical Properties

A. Location–Between Columbus Avenue and Berkeley Street in Boston

B. Access
1. North–Abutting Property
2. South–MBTA Back Bay Station
3. East–Berkeley Street Bridge
4. West–Columbus Avenue Bridge

II. Existing Facilities (See plan and section for location)

A. MTA
1. Mainline Westbound 3–12' travel lanes
2. Mainline Eastbound 3–12' travel lanes
3. North retaining wall
4. Boat slab
5. Columbus Avenue bridge
6. Berkeley Street bridge
7. Arlignton Street WB On Ramp

B. Conrail
1. Inbound & Outbound track

C. Others
1. MBTA Orange Line track structure
2. MBTA/Amtrak Back Bay Station
3. South retaining wall
4. Adjacent buildings

III. Potential Utility Service Connections

A. Electric–Columbus Ave./Berkeley St.
B. Gas–Columbus Ave./Berkeley St.
C. Steam–None
D. Telephone–Columbus Ave./Berkeley St.
E. Water–Columbus Ave./Berkley St.
F. Sanitary Sewer–Berkeley Street
G. Storm Drain–Berkeley Street

IV. Future Facilities with Potential Impact on Development

A. MTA
1. WB Off Ramp–Berkeley
2. Close WB on Ramp–Arlignton

B. Others
1. Amtrak NE Corridor Electrification
2. North Station/South Station rail link

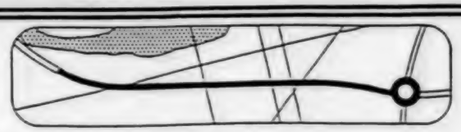
LEGEND

(A.1) Existing Ficility

Section

Layout/Property Line

Potential Support Location



URBAN DESIGN

PARCEL 18

Study Area ..... Bay Village/Chinatown
Location ..... Berkeley Street to Arlington Street
Access ..... Berkeley Street, Arlington Street, Cortes Street
Constructability: ..... B

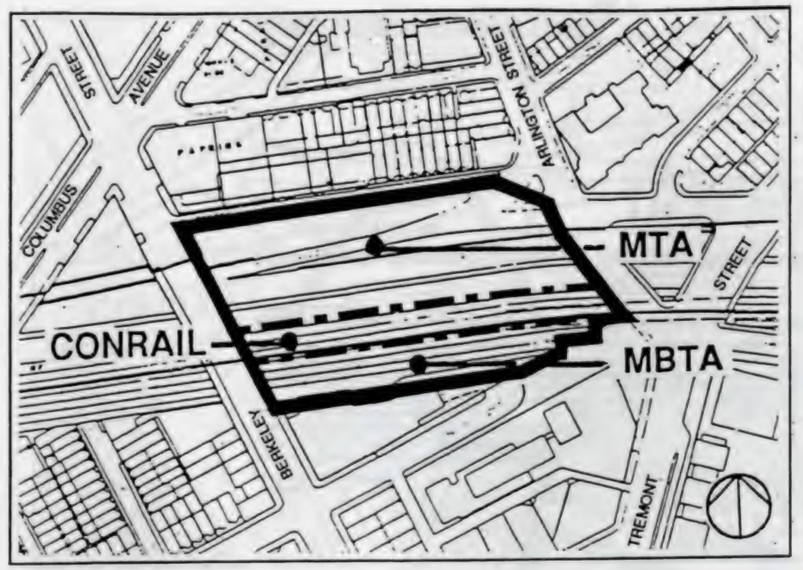
Size:
MTA ..... 91,914 sq. ft.
Conrail 22,008
MBTA 41,191
Parcel Size 155,113

CONTEXT

This parcel includes the Arlington Street on-ramp, which could be reconfigured or removed in future improvements. Victorian townhouses line the northern edge of Cortes Street, and a recently remodeled office building is located on the southern edge of the parcel. A transformer is adjacent to the Berkeley Bridge.

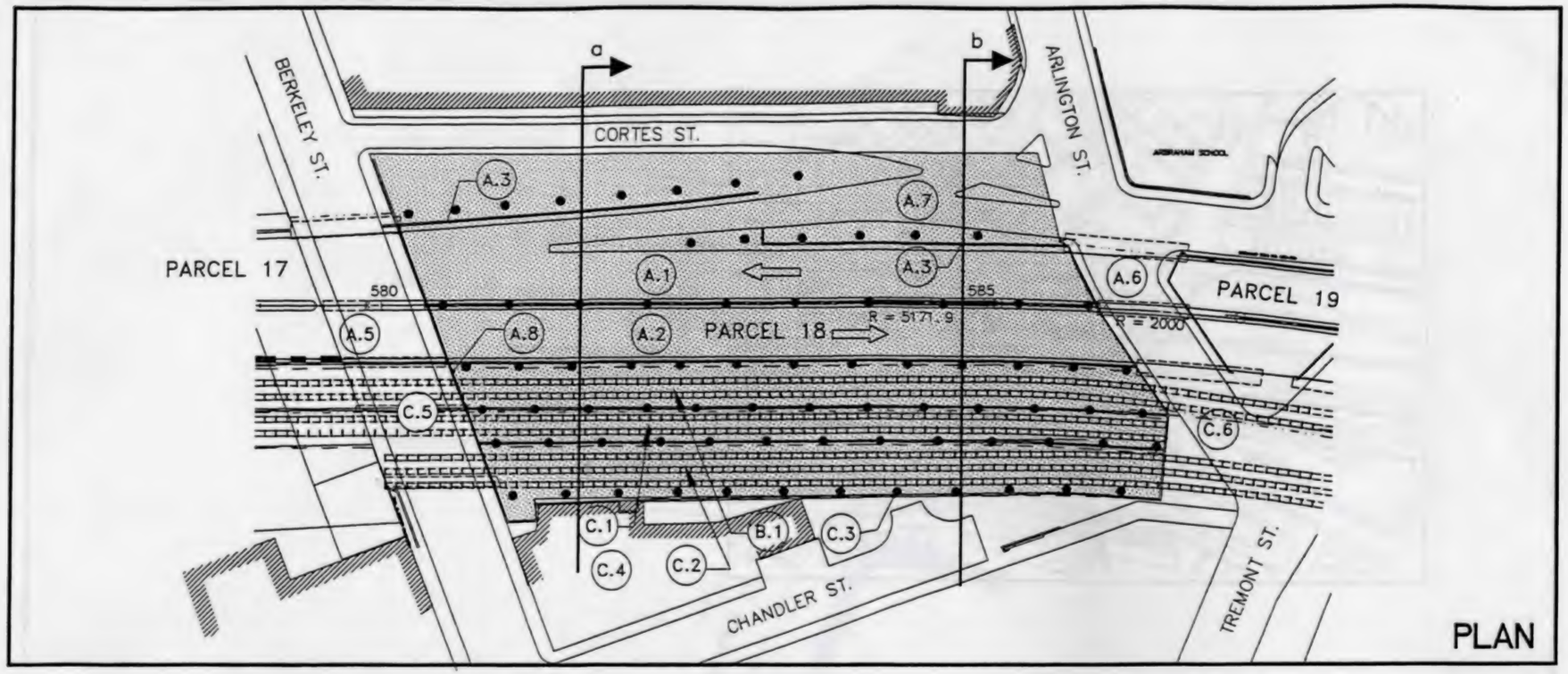
CONSTRAINTS/OPPORTUNITIES

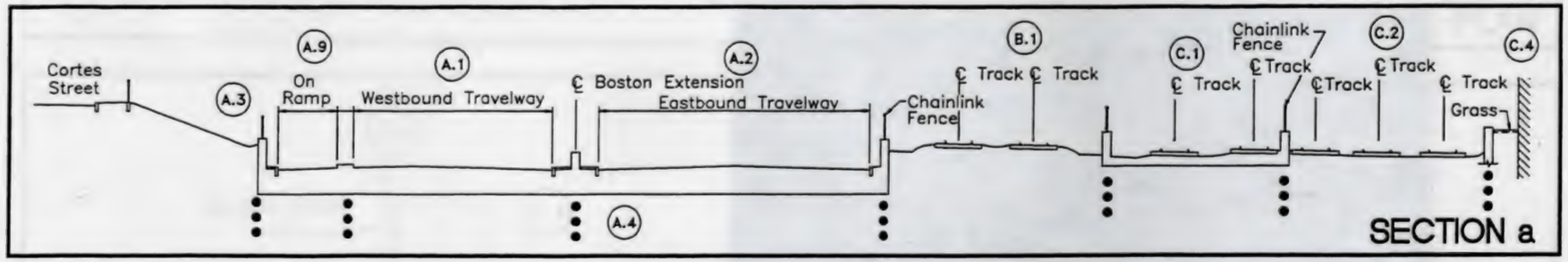
This parcel's size and regularity make it attractive for development. Its southern edge is developed in one study concept as an extension of both Herald Boulevard and Southwest Corridor Park. The existing on-ramp, or an alternative off-ramp, might be integrated with new low-rise development fronting Cortes Street.

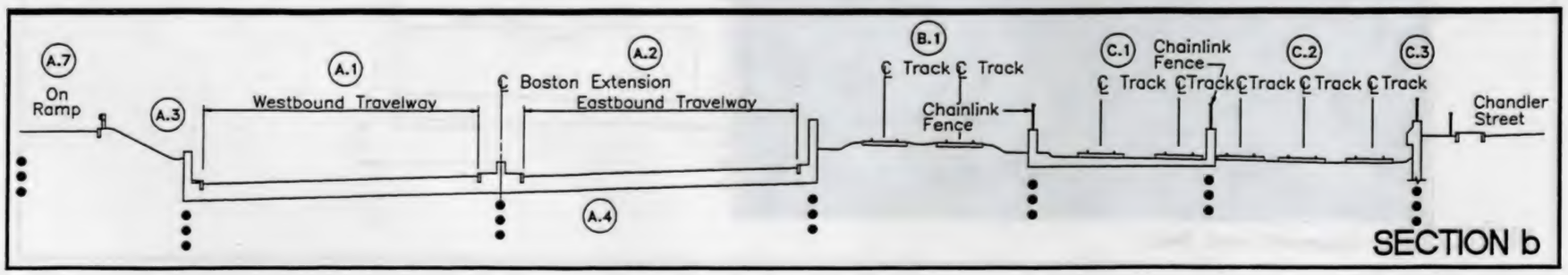


Arlington Street On-Ramp

75 Berkley Building







ENGINEERING EVALUATION

PARCEL 18

I. Physical Properties

A. Location–Between Berkeley Street and Arlington Street in Boston

B. Access
1. North–Abutting Property
2. South–MBTA Orange Line
3. East–Arlington Street bridge
4. West–Berkeley Street bridge

II. Existing Facilities
(See plan and section for location)

A. MTA
1. Mainline Westbound 3–12' travel lanes
2. Mainline Eastbound 3–12' travel lanes
3. North retaining wall
4. Boat slab
5. Berkeley Street bridge
6. Arlington Street bridge
7. Arlington Street WB On ramp
8. Utility bridge

B. Conrail
1. Inbound & Outbound track

C. Others
1. MBTA Orange Line track structure
2. MBTA/Amtrak tracks (3)
3. South retaining wall
4. Abutting building
5. Berkeley Street bridge
6. Arlington Street bridge

III. Potential Utility Service Connections

A. Electric–Berkeley St./Cortes St./ Arlington Street
B. Gas–Berkeley St./Cortes St.
C. Steam–None
D. Telephone–None
E. Water–Berkeley St./Arlington St.
F. Sanitary Sewer–Berkeley St./ Arlington Street
G. Storm Drain–Berkeley St./Cortes St./ Arlington Street

IV. Future Facilities with Potential Impact on Development

A. MTA
1. WB Off Ramp–Berkeley St.
2. Close WB On Ramp–Arlington St.

B. Others
1. Amtrak NE Corridor Electrification
2. North/South rail link
3. Herald Boulevard Extension

LEGEND

(A.1) Existing Facility

Section

Layout/Property Line

Potential Support Location

URBAN DESIGN

PARCEL 19

Study Area ..... Bay Village/Chinatown
Location ..... Intersection of Tremont Street and Arlington Street
Access ..... Tremont Street, Arlington Street, Marginal Road
Constructability: C

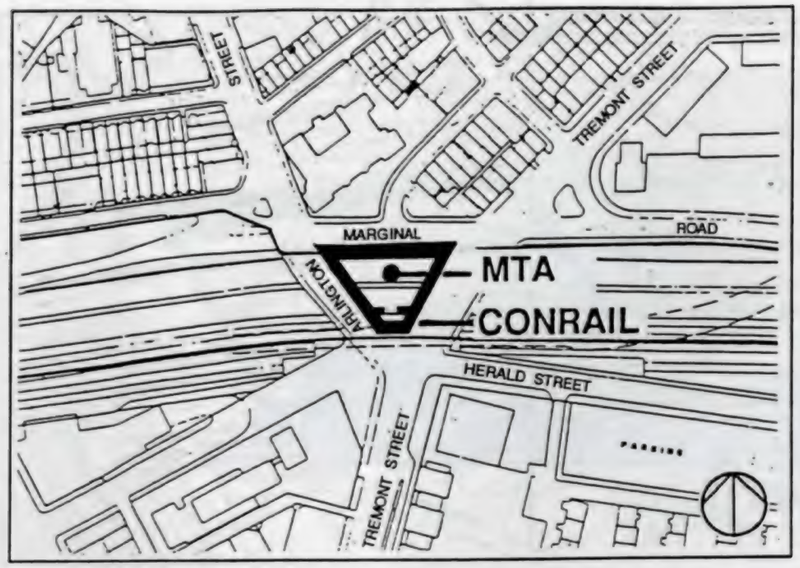
Size:
MTA ..... 10,850 sq. ft.
Conrail 1,120
Parcel Size 11,970

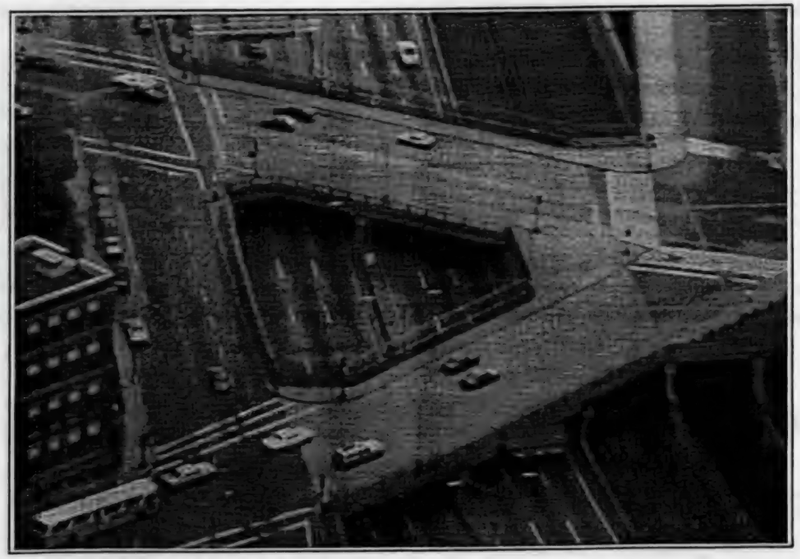
CONTEXT

The triangular shape of parcel 19 results in a low constructability rating. Boston High School is across Marginal Road on a very small site. A convenience grocery with off-street parking is on the corner of Tremont Street and Marginal Road. Underdeveloped parcels give the area a formless and desolate feeling. While this parcel is essentially an open traffic island, it occupies a highly visible focal position at the intersection of major streets.

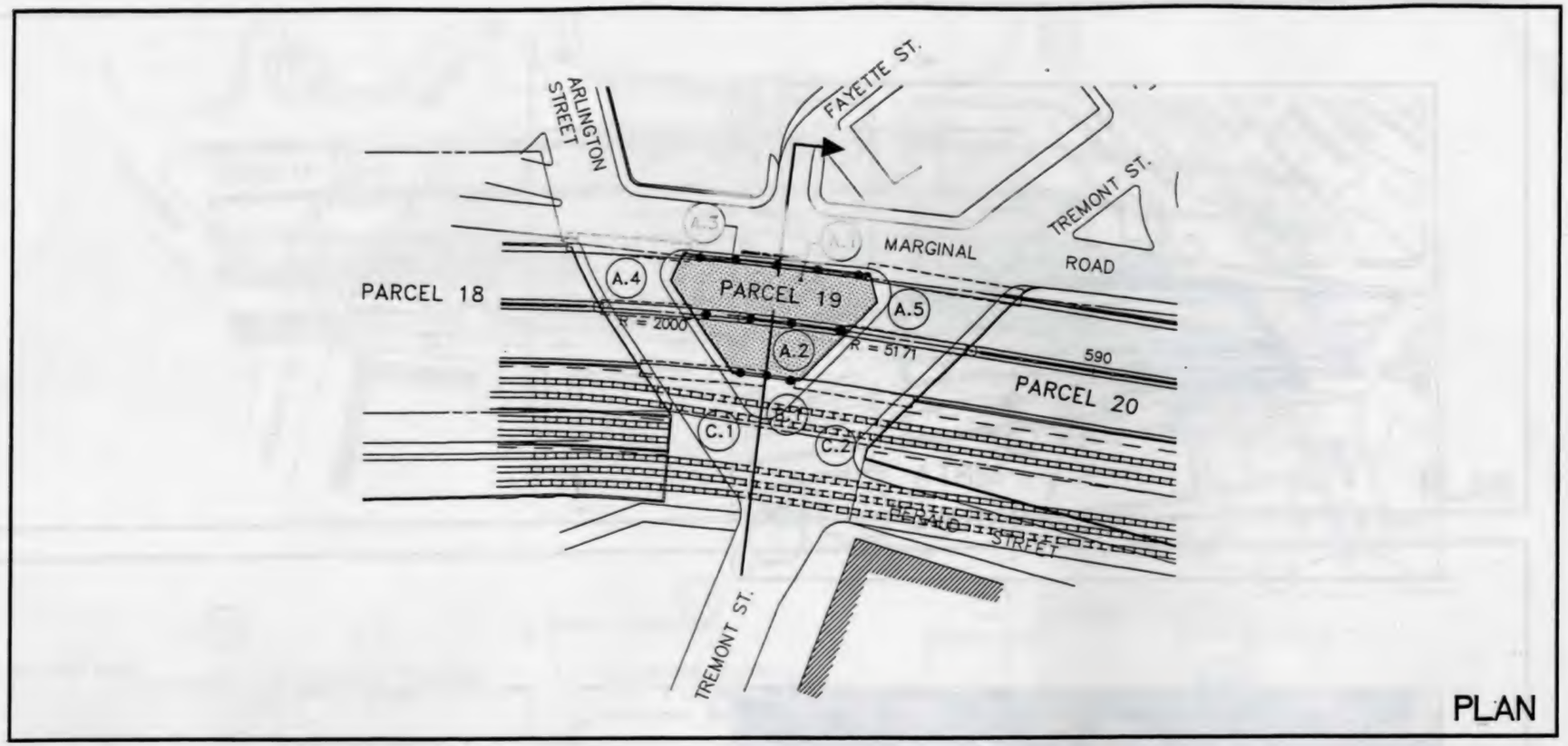
CONSTRAINTS/OPPORTUNITIES

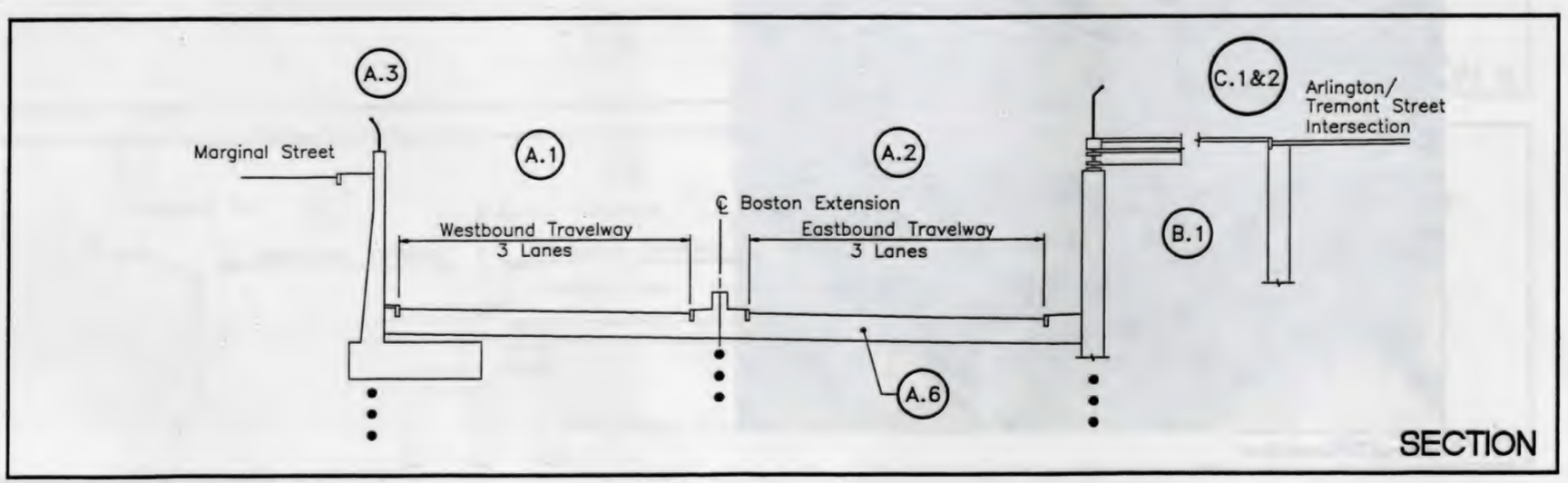
This parcel could be the site of a civic monument which need not require the construction of a platform. Alternatively, if Marginal Road were closed, it could be added to the site of Boston High School to provide additional outdoor recreation space.





East to Arlington and Tremont Streets





ENGINEERING EVALUATION

PARCEL 19

I. Physical Properties

A. Location—Between Arlington Street and Tremont Street in Boston

B. Access
1. North—Marginal Road
2. South—Arlington and Tremont Street
3. East—Tremont Street
4. West—Arlington Street

II. Existing Facilities
(See plan and section for location)

A. MTA
1. Mainline Westbound 3—12' travel lanes
2. Mainline Eastbound 3—12' travel lanes
3. North Retaining Wall
4. Arlington Street bridge
5. Tremont Street bridge
6. Boat slab

B. Conrail
1. Inbound & Outbound track

C. Others
1. Arlington Street Bridge
2. Tremont Street Bridge

III. Potential Utility Service Connections

A. Electric—Arlington St./Marginal Rd.
B. Gas—Cortes St./Bay Street
C. Steam—None
D. Telephone—Arlington St./Tremont St.
E. Water—Mountfort St./Beacon St.
F. Sanitary Sewer—Arlington St./Tremont St.
G. Storm Drain—Arlington St./Tremont St.

IV. Future Facilities with Potential Impact on Development

A. MTA
1. WB Off Ramp—Berkeley St.

B. Others
1. Amtrak N.E. Corridor Electrification
2. North/South rail link
3. 2 Way Herald Boulevard

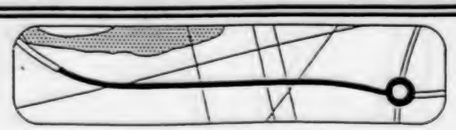
LEGEND

(A.1) Existing Facility

Section

Layout/Property Line

Potential Support Location



URBAN DESIGN

PARCEL 20

Study Area ..... Bay Village/Chinatown
Location ..... Tremont Street to Shawmut Avenue
Access ..... Tremont, Shawmut and Herald Streets, and Marginal Road
Constructability C

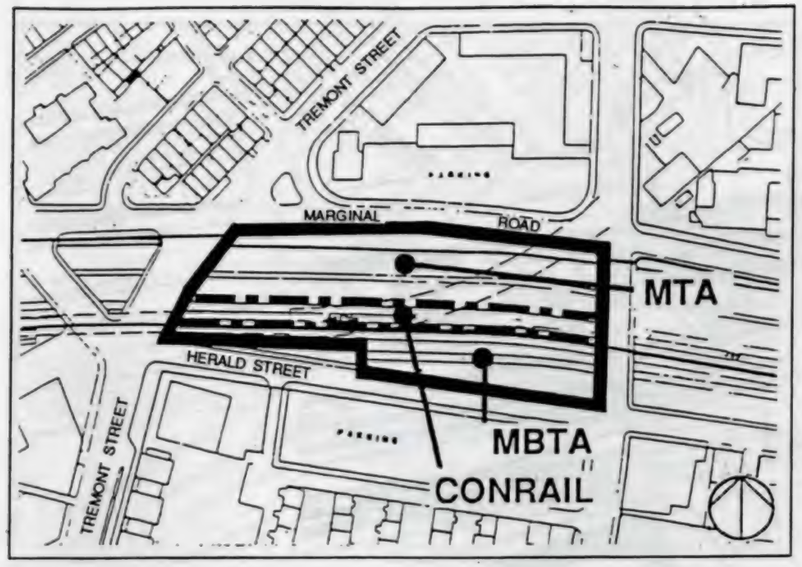
Size:
MTA ..... 71,156 sq. ft.
Conrail 14,501
MBTA 22,754
Parcel Size 108,411

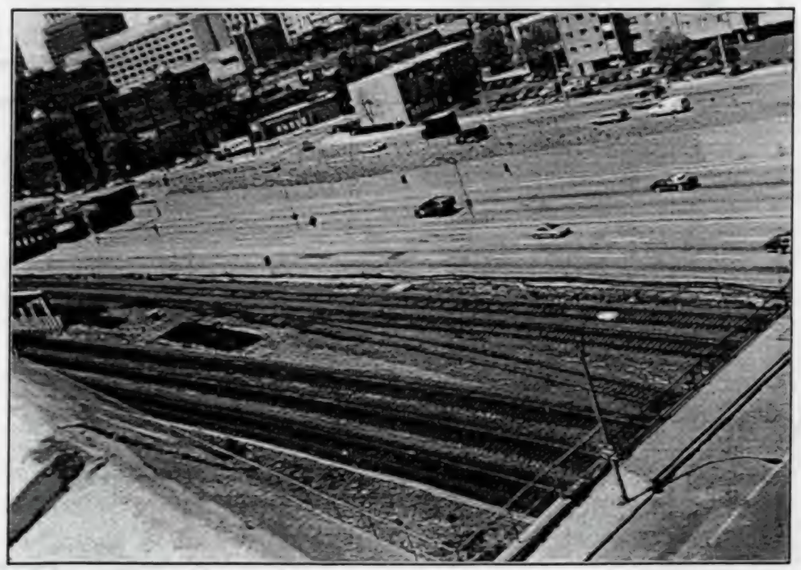
CONTEXT

This parcel contains the Orange Line tunnel below the turnpike. Mass Pike Towers, a high-density residential complex, is located across Marginal Road to the north. A supermarket and a two-level parking structure serving the Castle Square development face Herald Street to the South.

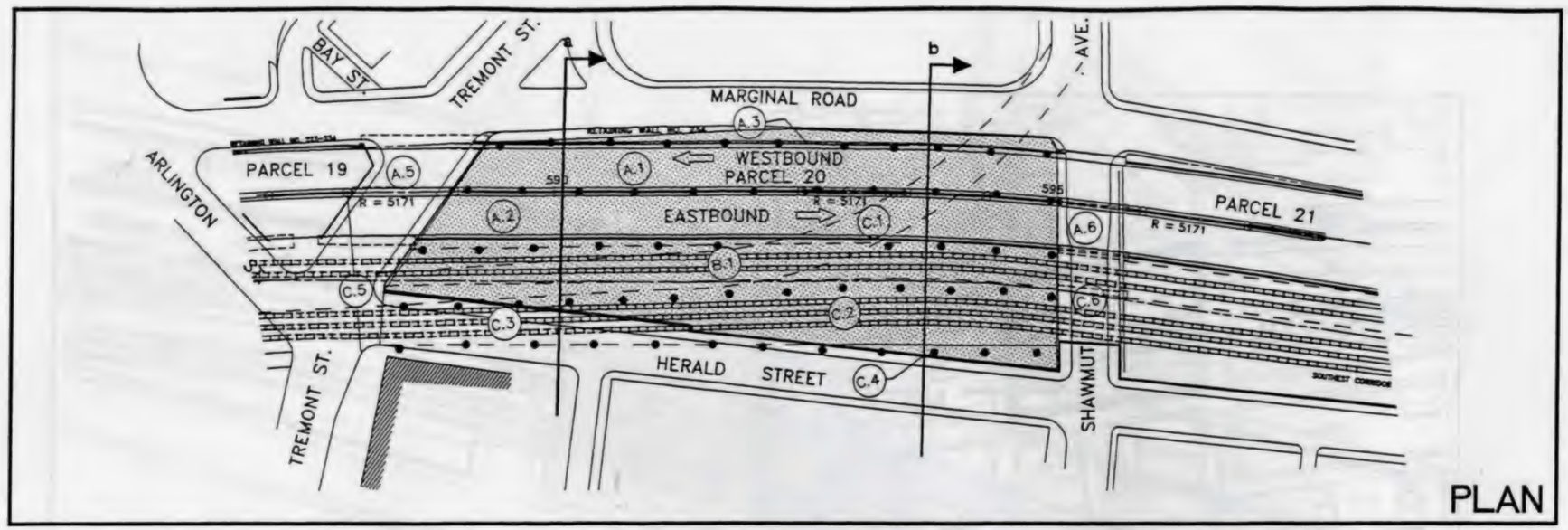
CONSTRAINTS/OPPORTUNITIES

This parcel has been suggested as a location for a turnpike on-ramp. The ramp would occur between the turnpike and the railroad tracks near the center line of the parcel. This structure would make air rights development extremely difficult, and therefore unlikely, especially for affordable residential use. An opportunity exists to convert a section of Herald Street (between Tremont Street and Harrison Avenue) into a two-way, four lane boulevard. The Herald Boulevard concept, which would have no on-ramp, could improve the area's image and encourage office or mixed-use development. Along the parcel's southern edge, space should be provided for the expansion of the Southwest Corridor Park.

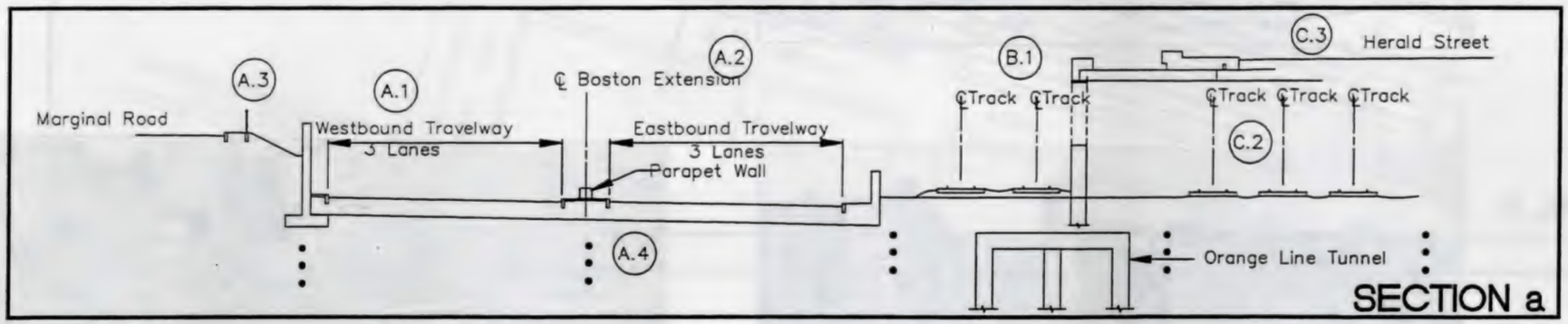




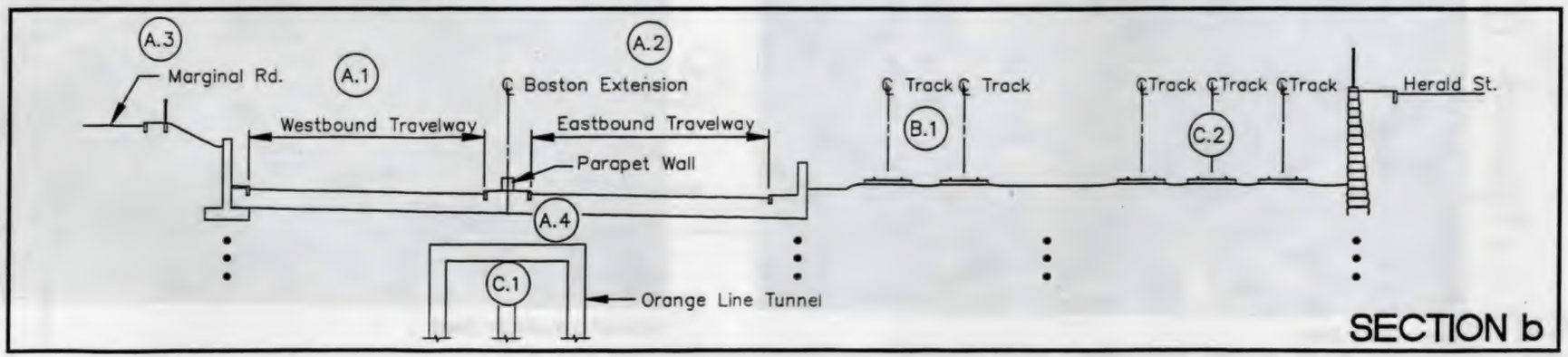
Northwest to Tremont Street



PLAN



SECTION a



SECTION b

ENGINEERING EVALUATION
PARCEL 20

I. Physical Properties

A. Location—Between Tremont Street and Shawmut Ave. in Boston

B. Access
1. North—Marginal Road
2. South—MBTA, Amtrak
3. East—Shawmut Avenue Bridge
4. West—Tremont Street Bridge

II. Existing Facilities
(See plan and section for location)

A. MTA
1. Mainline Westbound 3—12' travel lanes
2. Mainline Eastbound 3—12' travel lanes
3. North retaining walls
4. Boat slab
5. Tremont Street Bridge
6. Shawmut Ave. Bridge

B. Conrail
1. Inbound & Outbound Track

C. Others
1. MBTA Orange Line Tunnel
2. MBTA/Amtrak tracks (3)
3. Herald Street Bridge
4. South retaining wall
5. Tremont Street Bridge
6. Shawmut Ave. Bridge

III. Utility Services

A. Electric—Marginal Rd./Shawmut Ave.
B. Gas—Marginal Rd./Herald St./Shawmut Ave.
C. Steam—None
D. Telephone—Tremont St./Shawmut Ave.
E. Water—Marginal Rd./Herald St.
F. Sanitary Sewer—Tremont St./Shawmut Ave.
G. Storm Drain—Marginal Rd./Herald St.

IV. Future Facilities
(With Potential Impact on Development)

A. MTA
1. WB off Ramp—Berkeley Street
2. EB on Ramp—Arlington Street

B. Others
1. Amtrak NE Corridor Electrification
2. North/South rail link
3. 2-Way Herald Boulevard

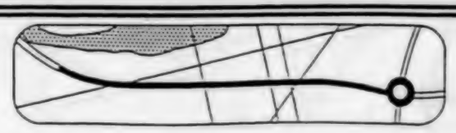
LEGEND

(A.1) Existing Facility

Section

Layout/Property Line

• • • Potential Support Location



URBAN DESIGN

PARCEL 21

Study Area ..... Bay Village/Chinatown
Location ..... Tremont Avenue to Washington Street
Access ..... Tremont Avenue; Washington and Herald Streets, and Marginal Road
Constructability ..... A

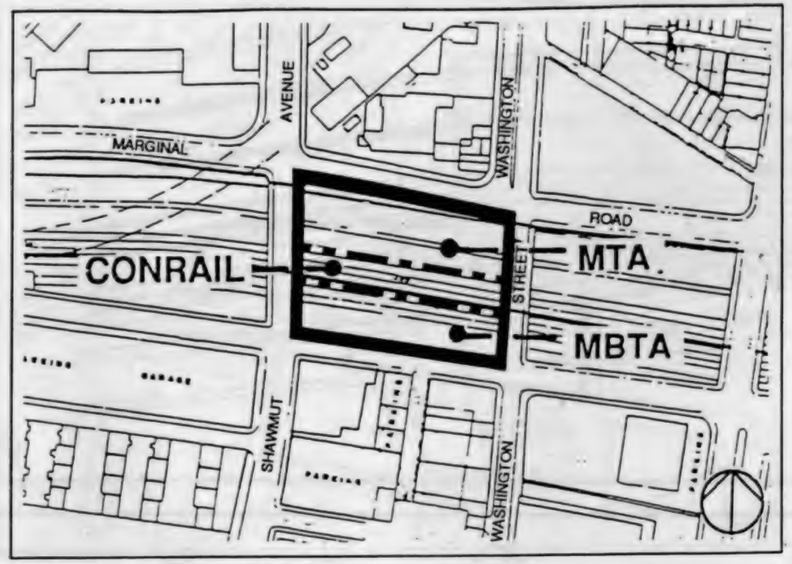
Size:
MTA ..... 32,284 sq. ft.
Conrail 14,501
MBTA 22,754
Parcel Size 69,539

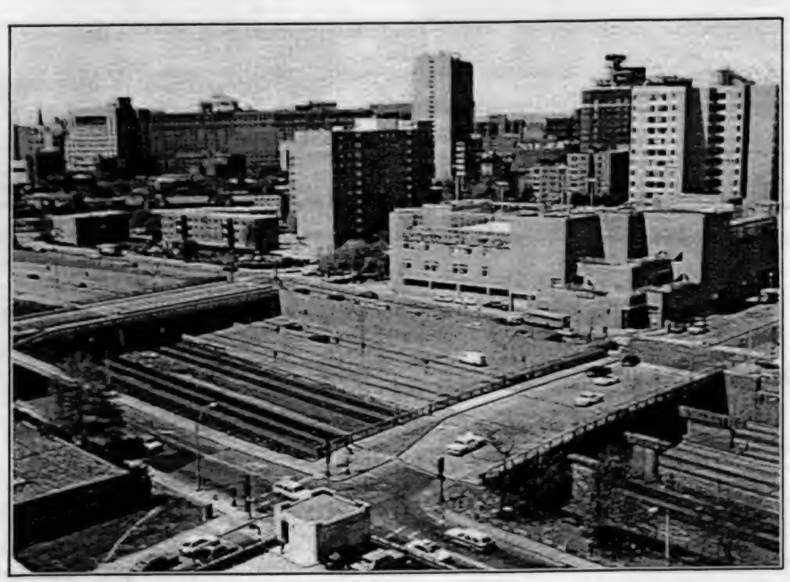
CONTEXT

This parcel is a potentially prominent site located between two arterials. The Quincy School across Marginal Road is a modern inner city facility. A renovated industrial building, now housing office and show room uses, fronts the parcel on Herald Street. Surface parking is adjacent.

CONSTRAINTS/OPPORTUNITIES

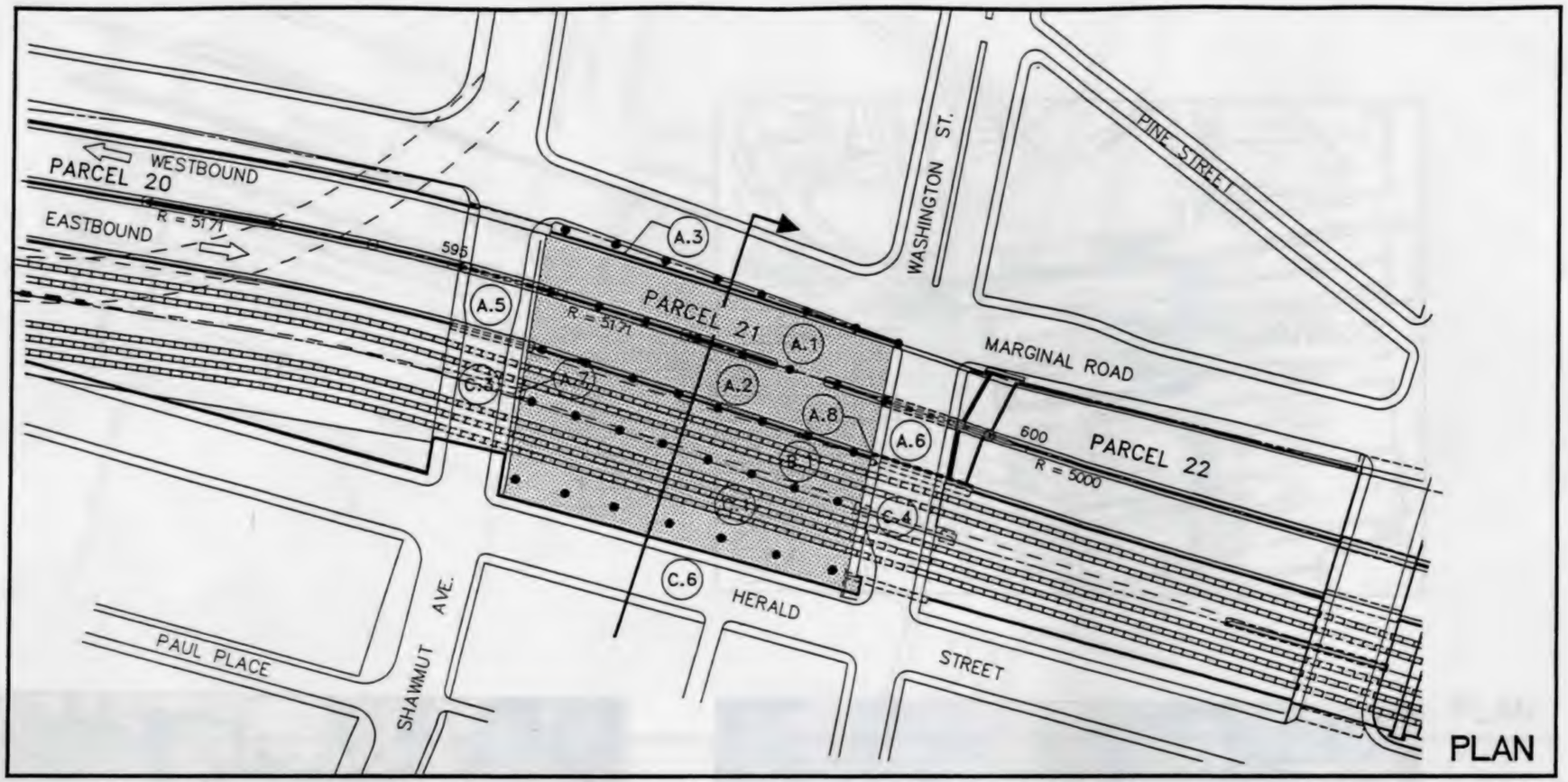
The site, with a high constructability rating, could be readily developed. In the Herald Boulevard concept, Marginal Road is closed and the parcel is improved in part as open space with a direct connection to the Quincy School This is also an area with heavy pedestrian travel between Chinatown and South End residential areas so that a public open space here could expect high use. A strategy for intensive development of the adjacent parcels might create the means for open space improvement. The MBTA's planned widening of the Washington Street bridge would reduce the parcel's length.

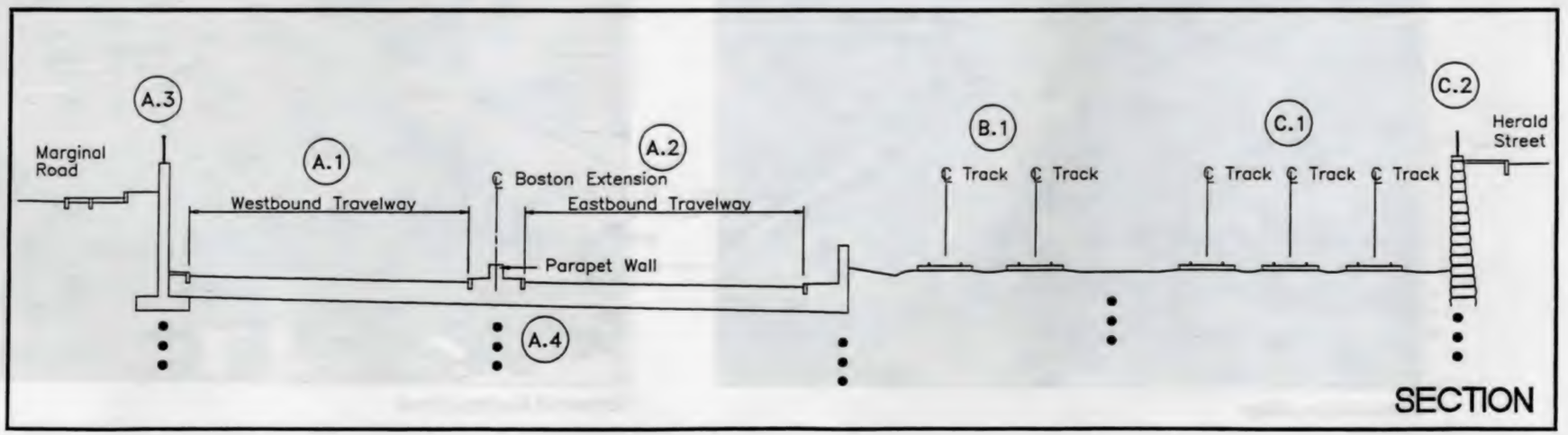




North to Quincy School

Northeast to Washington Street





ENGINEERING EVALUATION
PARCEL 21

I. Physical Properties

A. Location–Between Shawmut Avenue and Washington Street in Boston

B. Access
1. North–Marginal Road
2. South–Amtrak
3. East–Washington Street bridge
4. West–Shawmut Avenue bridge

II. Existing Facilities
(See plan and section for location)

A. MTA
1. Mainline Westbound 3–12' travel lanes
2. Mainline Eastbound 3–12' travel lanes
3. North retaining wall
4. Boat slab
5. Shawmut Avenue bridge
6. Washington Street bridge
7. Utility bridge
8. Utility bridge

B. Conrail
1. Inbound & Outbound track

C. Others
1. MBTA/Amtrak tracks (3)
2. South retaining wall
3. Shawmut Avenue bridge
4. Washington Street bridge

III. Potential Utility Service Connections

A. Electric–Shawmut Ave./Marginal Rd./ Washington St./ Herald St.

B. Gas–Shawmut Ave./Marginal Rd./ Washington St.

C. Steam–None

D. Telephone–Shawmut Ave./Washington St.

E. Water–Marginal Rd./Herald St.

F. Sanitary Sewer–Shawmut Ave./Washington St.

G. Storm Drain–Marginal Rd./Herald St.

IV. Future Facilities with Potential Impact on Development

A. MTA
1. WB off ramp–Berkeley Street
2. EB on ramp–Arlington Street

B. Others
1. Amtrak NE Corridor Electrification
2. North/South rail link
3. 2 Way Herald Boulevard

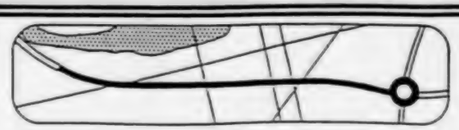
LEGEND

(A.1) Existing Ficility

Section

Layout/Property Line

• • • Potential Support Location



URBAN DESIGN
PARCEL 22

Study Area ..... Bay Village/Chinatown
Location ..... Washington Street to Harrison Avenue
Access ..... Harrison Avenue, Herald, and Washington Streets and Marginal Road
Constructability ..... A

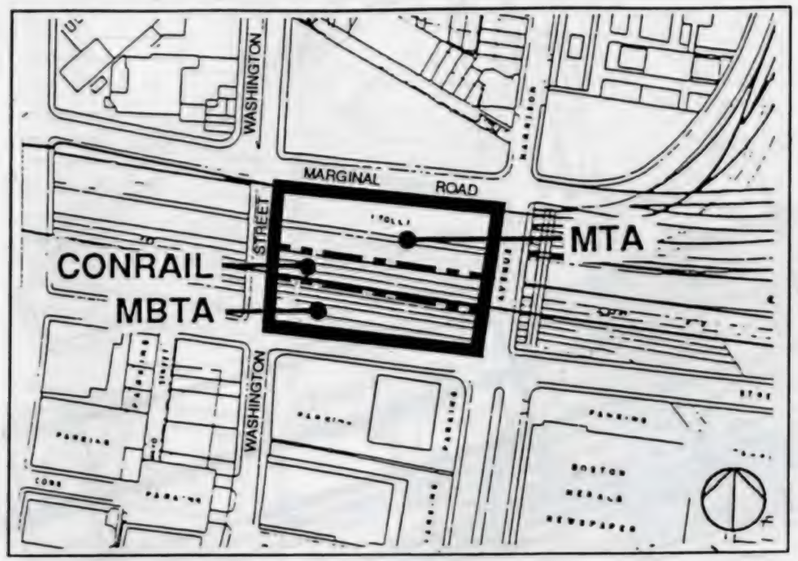
Size:
MTA ..... 30,961 sq. ft.
Conrail 16,525
MBTA 20,133
Parcel 67,619

CONTEXT

Temporary parking, on a site planned for high rise residential development, and a Chinese Church are across Marginal Road to the north; the recently remodeled Teradyne research facility and parking ramp are across Herald Street to the south. The parcel is regularly shaped and has a high constructability rating.

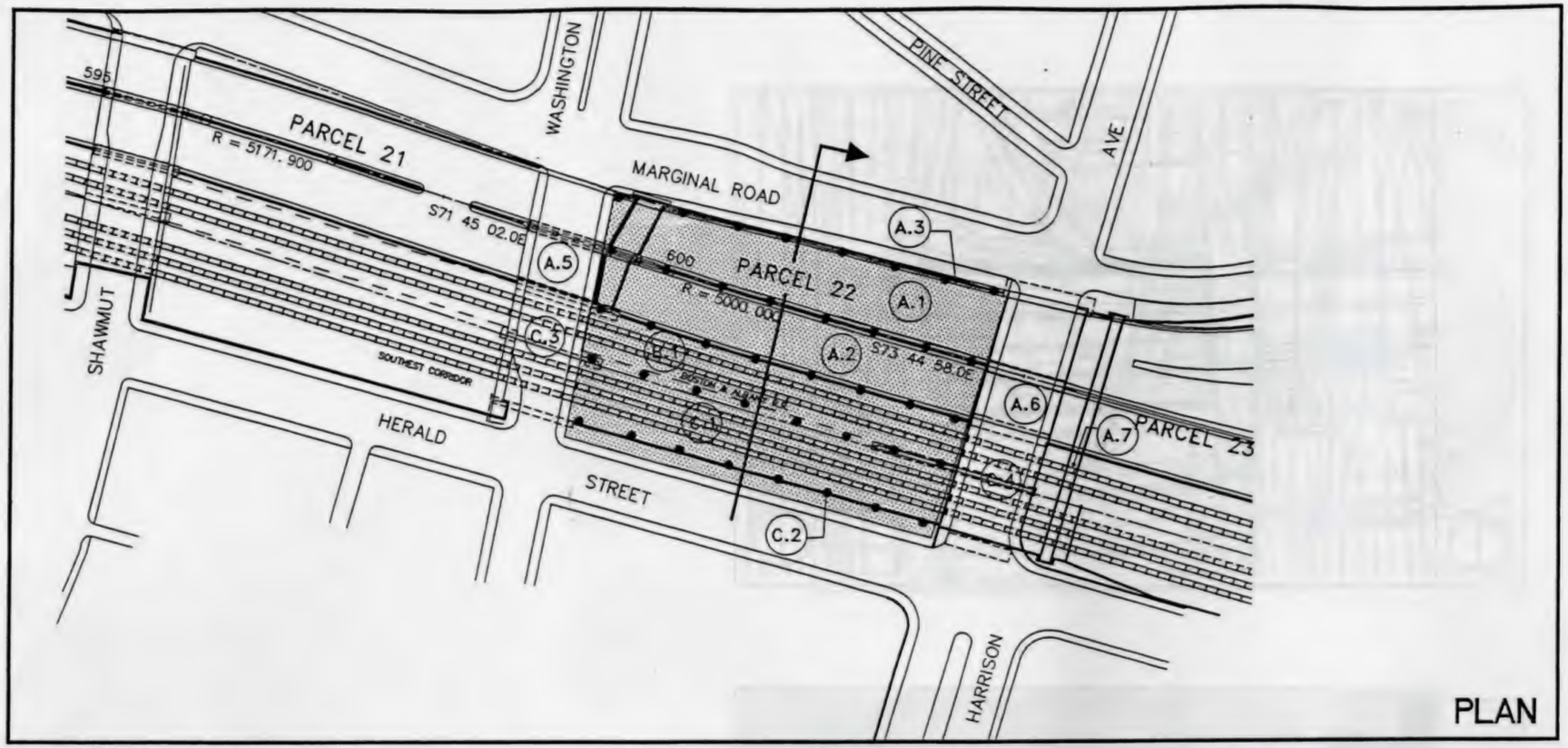
CONSTRAINTS/OPPORTUNITIES

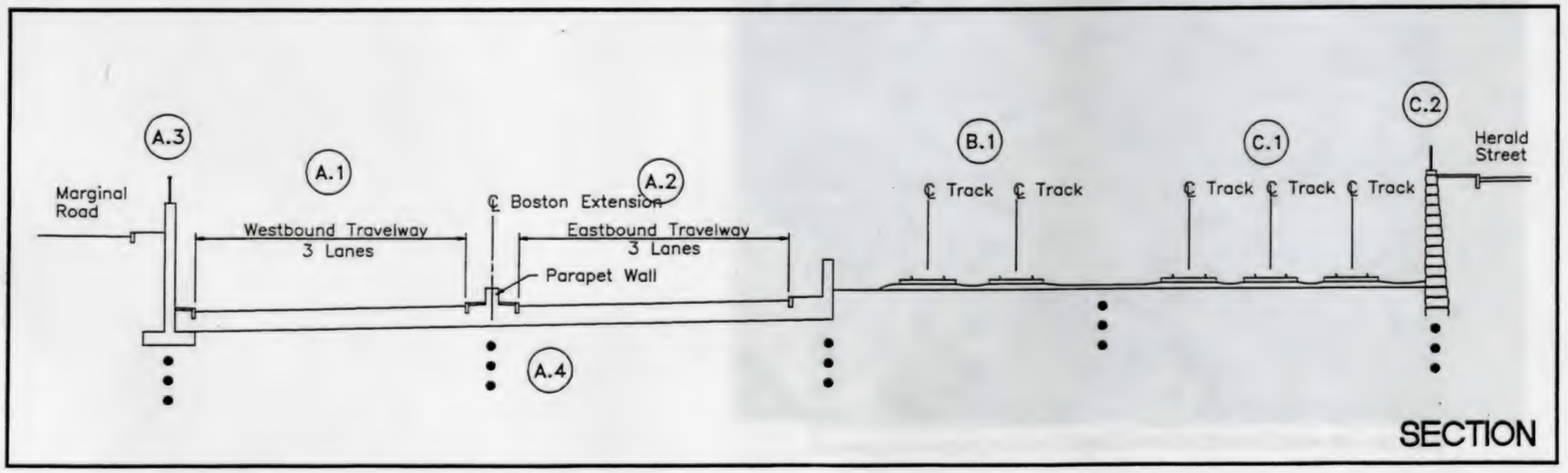
This parcel has few constraints and a high constructabilty rating. It has the potential for an intensive level of development.



North to Tai Tung Village

Northwest to Washington Street





ENGINEERING EVALUATION
PARCEL 22

I. Physical Properties

A. Location—Between Washington Street and Harrison Ave. in Boston

B. Access
1. North—Marginal Road
2. South—Amtrak
3. East—Harrison Avenue bridge
4. West—Washington Street bridge

II. Existing Facilities (See plan and section for location)

A. MTA
1. Mainline Westbound 3—12'travel lanes
2. Mainline Eastbound 3—12'travel lanes
3. North retaining wall
4. Boat slab
5. Washington Street bridge
6. Hamson Avenue bridge
7. Utility Bridge

B. Conrail
1. Inbound & Outbound track

C. Others
1. MBTA/Amtrak tracks (3)
2. South retaining wall
3. Washington Street bridge
4. Harrison Avenue bridge

III. Potential Utility Service Connections

A. Electric—Washington St./Marginal Rd./ Harrison Ave./Herald Ave.
B. Gas—Washington St./Harrison Ave.
C. Steam—Harrison Ave.
D. Telephone—Washington St./Harrison Ave.
E. Water—Marginal Rd./Harrison Ave./ Herald St.
F. Sanitary Sewer—Marginal Rd./Harrison Ave.
G. Storm Drain—Marginal Rd./Herald St.

IV. Future Facilities with Potential Impact on Development

A. MTA
1. WB off ramp—Berkeley St.
2. EB on ramp—Arlington St.

B. Others
1. Amtrak NE Corridor Electrification
2. North/South rail link
3. South Bay Interchange ramps
4. 2 Way Herald Boulevard

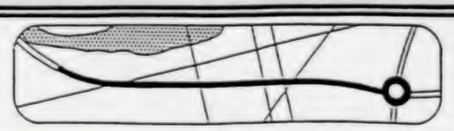
LEGEND

(A.1) Existing Facility

Section

Layout/Property Line

• • • Potential Support Location



URBAN DESIGN

PARCEL 23

Study Area ..... Bay Village/Chinatown
Location ..... Harrison Avenue to Albany Street
Access ..... Harrison Avenue, Albany and Herald Streets
Constructability ..... B

Size:

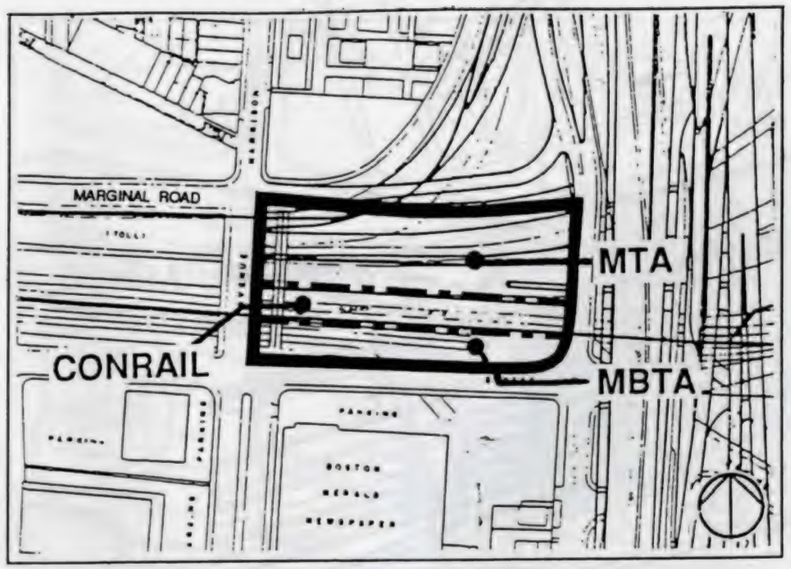
MTA	54,369
Conrail	24,384
MBTA	25,534
Parcel	104,287

CONTEXT

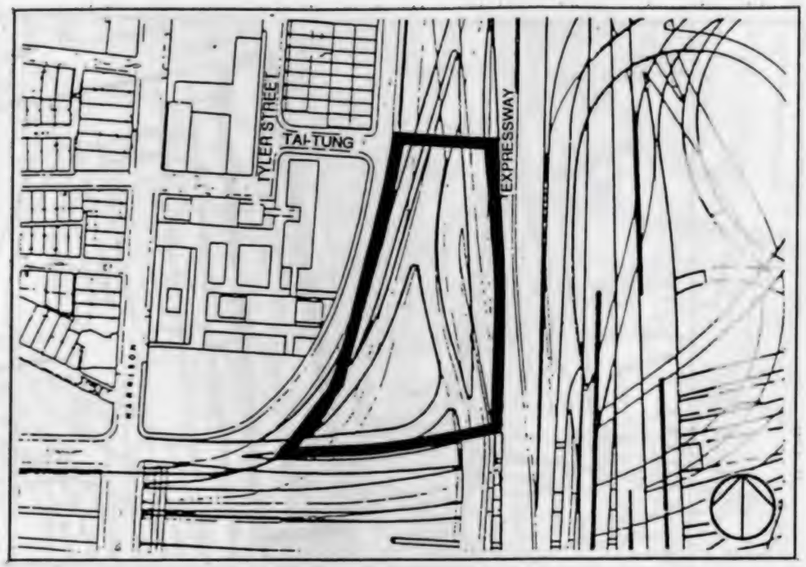
The Boston Herald newspaper facilities are across Herald Street to the south of parcel 23. Surface parking is adjacent to Tai Tung Village, a high-density residential development across Hudson Street to the north. A new exit ramp from the Third Harbor Tunnel to the Harrison Street- Marginal Road intersection may form the parcel's new northern edge, but in the Herald Boulevard concept the ramp swings south to align with Herald Street instead. Adjacent parcels open to the South Bay Interchange in an arc from Tai Tung Village to Herald Boulevard to the south.

CONSTRAINTS/OPPORTUNITIES

This parcel will have high visibility from the interchange and expressway corridor; therefore it is seen as an element of the interchange rather than as an integral piece of the city's edge. A curved exit ramp alignment in the Herald Boulevard alternative would make development difficult and perhaps infeasible. However, in other alternatives, and with imaginative design, it could become a powerful gateway feature.



South Bay with Herald Buildings in the Foreground



South Bay with Access and Exit Ramps

URBAN DESIGN

PARCEL 24

Study Area ..... South Bay
Location ..... Hudson Street to Southbound travel lanes of the Southeast Expressway
Access ..... Hudson Street
Constructability C
Parcel Size ..... 124,146 sq. ft.*

* approximate area

CONTEXT

The parcel is a segment of the South Bay interchange, from the southbound travel lanes of the Southeast Expressway east to Hudson Street. The segment includes off and on-ramps and may include a new Third Harbor Tunnel exit ramp to Marginal Road. Tai Tung Village, a high density residential complex, is across Hudson Street to the west.

CONSTRAINTS/OPPORTUNITIES

The curved alignments and varied gradients of proposed Central Artery ramp changes will make air rights construction technically difficult and economically infeasible.

URBAN DESIGN

PARCEL 25

Study Area ..... South Bay
Location ..... Hudson Street to Southbound Travel Lanes (Asian Community Center north to Kneeland Street)
Access ..... Hudson Street, Kneeland Street
Constructability ..... A †

Parcel Size ..... 54,000 sq. ft.†*

† on-grade portion only
* approximate area

CONTEXT

Currently the space between Hudson Street and the existing retaining wall is too narrow for development purposes. With the reconstruction of the ramps east of the retaining wall during the Central Artery/Third Harbor Tunnel (CA/THT) project, the retaining wall will be reconstructed east of its present location . Extending behind an office building fronting Kneeland Street, Victorian townhouses, the Chinese Community Church, and the Asian Community Center line Hudson Street's western edge. A vacant site adjacent to the office building has been designated as the location of a new YMCA.

CONSTRAINTS/OPPORTUNITIES

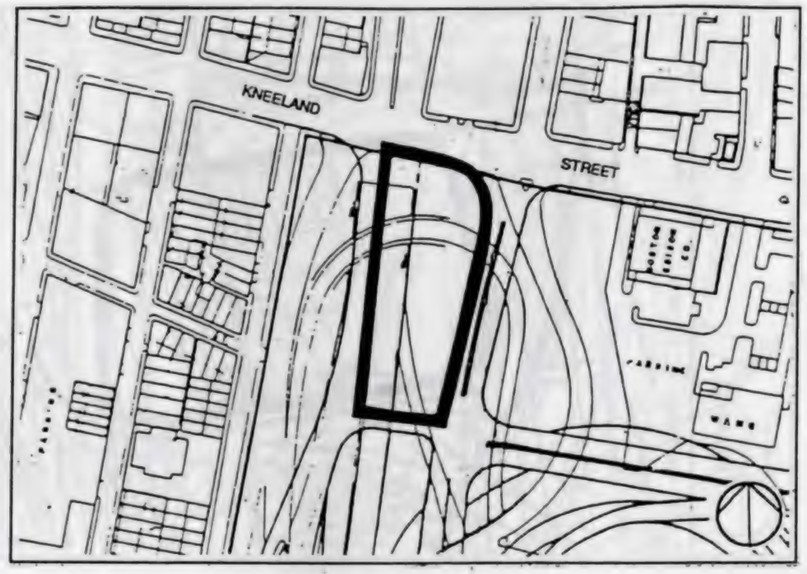
The on-grade portion of this parcel created by relocation of the retaining wall is seen as the only feasible area for development. The sound barrier / retaining wall will be a massive structure, rising to a height 35 feet above existing grade level; if coordinated with interchange planning it might be utilized in new development.

Hudson Street and Tai Tung Towers on the Right

PARCEL 26

Study Area ..... South Bay
Location ..... Between Southbound on-ramp (HOV Ramp north to Kneeland Street)
Access ..... Kneeland Street
Constructability C
Size ..... 51,300 sq. ft.*

* approximate area



The parcel is shown in the foreground

CONTEXT

The parcel is a narrow rectangle between two new southbound on-ramps to be constructed as part of the Central Artery project and includes an existing pump station and the tunnel extension for the southbound travel lanes. The tunnel portal and the initial piece of the ramp to the proposed South Station Transportation Center will be at the parcel's southern end, while its opposing northern end faces Kneeland Street. To the west a proposed retaining wall will screen the view to Chinatown; to the east the basketball courts of Pagoda Park edge the expressway's northbound exit.

CONSTRAINTS/OPPORTUNITIES

Parcel 7, viewed alone, is modestly sized, has limited access, and presents a difficult foundation challenge. However, when linked to Parcel 27 to the west, it could offer a significant development opportunity. Below-grade parking could be extended from Parcel 27 beneath the intervening ramps to and from Kneeland Street. Negotiations should be undertaken with the Central Artery project planners to avoid potential conflicts.

URBAN DESIGN

PARCEL 27

Study Area ..... South Bay
Location ..... Between Northbound Off-ramp and Northbound Artery Portal (HOV Ramp north to Kneeland Street)
Access ..... Kneeland Street, HOV Ramp
Constructability ..... A-B
Parcel Size ..... 203,500 sq. ft.*

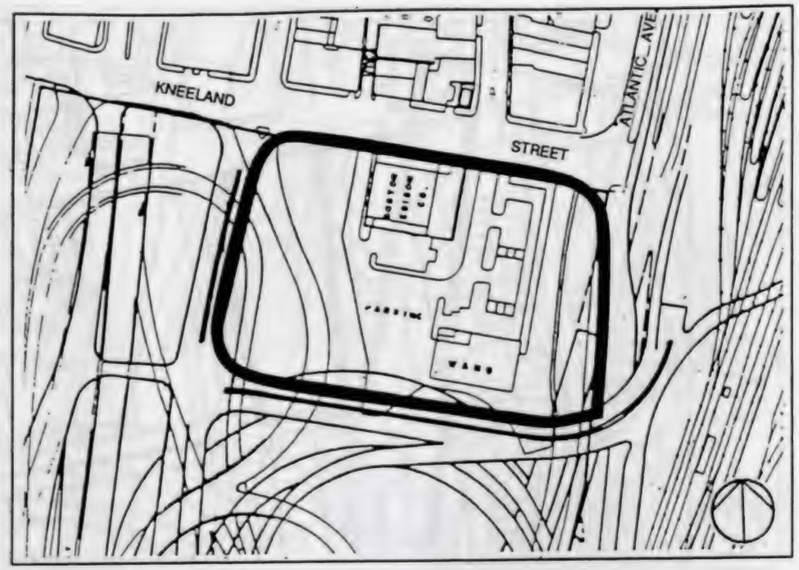
* approximate area

CONTEXT

This is a large, 4 1/2 acre parcel with a 500 foot Kneeland Street frontage. Restored light industrial and Leather District loft buildings are across Kneeland Street to the north. With the completion of the Central Artery project, ramps to and from Kneeland Street will edge the parcel to the west, the northbound portal of the artery will be located to the east and the HOV ramp will slope up along the parcel's southern edge toward the new Transportation Center to the east. The primary features of the site are the existing Boston Thermal steam generation plant and the Wang office building.

CONSTRAINTS/OPPORTUNITIES

The City of Boston Zoning Code allows a height of up to 400 feet on this parcel. This height allowance plus the fact that construction on this large parcel would not require costly air rights platforms should make this a very desirable development parcel. Full site development would, however, require the incorporation of the Wang and Boston Thermal building sites.



Boston Thermal Energy and Wang Building

URBAN DESIGN

PARCEL 28

Study Area ..... South Bay
Location ..... Interchange Infield
Access ..... At Wang Building
Constructability ..... D
Parcel Size ..... 383,328 sq. ft.*

* approximate area

CONTEXT

With the construction of the Central Artery/ Third Harbor Tunnel project, this parcel will continue to be surrounded by travel lanes and circular connectors: the converging bands of the north and southbound expressway and the depressed lanes of the turnpike—tunnel crossing. The site is contained by development only at its Chinatown and Kneeland Street edges.

Existing Infield

CONSTRAINTS/OPPORTUNITIES

The constructability rating for this area is very low given the proposed Central Artery/Third Harbor Tunnel alignment curvatures and below-grade structures. Access will be very limited, with only one narrow connection identified at the southwest corner of the Wang Building. After careful evaluation of these constraints, it is recommended that development opportunities should not be pursued within this parcel.

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Air rights study : a report prepared for the Massachusetts Turnpike Authority / by Comunitas, Inc. ... [et al.]
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